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FIFTY YEARS IN THE ROYAL NAVY

Percy Scott

Frontispiece

FIFTY YEARS IN THE ROYAL NAVY

BY

ADMIRAL SIR PERCY SCOTT, Bt.
K.C.B., K.C.V.O., Hon. LL.D., Cam.

WITH ILLUSTRATIONS

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PREFACE

In this volume I have set down the recollections of a lifetime of sixty-five years. It deals with my service in the Royal Navy during a period of over half a century. I entered it when most of the ships were propelled by wind, steam being only an auxiliary; our gun carriages differed little from those of Queen Elizabeth's day; midshipmen were punished in peculiar ways, and seamen received the "cat" for comparatively minor offences. In 1913 I was retired at my own request, and I thought that my active career had ended. I was mistaken, for, as these pages record, I was drawn into the backwaters of the War and became associated again with gunnery matters, with the fight against the enemy's submarines, and with the defence of London against aircraft, rendering to the best of my ability what service I could do to the country. I should not have decided to issue these chapters, which I began writing by way of recreation and amusement after I had gone on the retired list, if I did not hope that they might serve a useful purpose in future years.

From the time when I was a junior lieutenant I was interested in gunnery, realising its importance, and this book is devoted mainly to describing my efforts, assisted by other officers—in particular, Admirals of the Fleet Lord Fisher of Kilverstone and Viscount Jellicoe—to improve the shooting of the British Fleet.

How far these pages may prove of general interest I cannot tell, but they will at least show how opposed the Navy can be to necessary reforms, involving radical departures from traditional routine; the extent to which

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national interests may be injured owing to conservative forces within, and without, the public services; and what injury the country may suffer from politicians interfering in technical matters, which they necessarily do not understand. It is my hope that ultimate benefit may result from an honest attempt to shed light upon matters of vital concern to the nation by means of my personal record. In that belief, these reminiscences have been published, and I would only wish to add that nothing has been set down in malice. My intention has been not to attack persons, but to expose rather the weaknesses and defects of our administrative machinery, in so far as I had experience of it.

Obstinate opposition to change and reform is, in my opinion, a crime. In these days of rapid advance of science and swift development of mechanics, unless we move ahead we are bound to become retrograde. In order to hold our place in the world, in naval as well as in other affairs, we must encourage initiative, and, above all, so far as the Sea Service is concerned, inculcate in our officers ideas consistent with a modern steam Navy, instead of clinging to traditions and routines which were good in their day, but are now obsolete. And I may add that I have not much belief in the influence of an elaborately organised Naval Staff at the Admiralty, for the best creation of that character, possessed by Germany, failed under the test of war, as Lord Jellicoe's book on the record of the Grand Fleet has revealed. The Navy does not require a greatly expanded Naval Staff sitting in offices at the Admiralty performing routine work, most of which is unnecessary and seems to be done mainly in order to swell the number of officials employed. The Service requires open-eyed, well-educated, progressive, practical seamen, spending most of their time afloat, and when employed at the Admiralty not immersed in day-

to-day routine, but with *time to think of the needs of the future and how they should be met.*

But the root of bad naval administration lies, in my opinion, in the system by which business at the Admiralty is conducted. The civilian element, being permanent, obtains too much influence, and the naval element, which is always changing, has too little influence. The spirit in which work is done is wrong. There is insufficient incentive to encourage the best men. If a man does nothing, or next to nothing, he may be sure that he will do no wrong and his career will not be endangered; hence there arises a general desire to shirk responsibility and to evade making a decision until as many sub-departments as possible are drawn into the discussion. By that widely recognised means the individual who should act evades his personal responsibility and business is delayed, sometimes with serious results to the country.

As an illustration I will take the case of a proposal which is put forward for introducing a new way of firing the guns in His Majesty's ships, involving alterations of fittings, additional electricity, structural changes, and also affecting the engineering department. When the suggestion reaches the Admiralty the original paper will be marked to be sent for consideration to the Gunnery Department, the Electrical Department, the Dockyard Department, the Chief Constructor's Department, the Engineering Department, the Third Sea Lord, and the First Sea Lord. No limit of time is fixed; each department can keep the paper as long as it likes; it is passed from one official to another, the speed with which it moves depending upon the pleasure of each official concerned —*and frequently it gets lost.* I know of one case in which a letter took upwards of a year to circulate through the various departments of the Admiralty.

I suggest that this routine is radically wrong and

would not be tolerated by any man accustomed to run a commercial firm. He would determine to obtain the opinions of all concerned in any suggestion in the quickest possible time. First of all some one would decide if there was anything in a proposal which merited its being examined. If the decision was in the affirmative, several copies would be typed and one copy sent to each person whose opinion it was desired to obtain, bearing the date and time when it was sent out and the date for its return. In due course, the various replies would reach the heads of the firm and the matter would be dealt with. Under some such system business men conduct their affairs, and they are amazed when they are brought in contact with the Admiralty and other public departments.

War suspended to some extent this slow and cumbersome method of conducting affairs at the Admiralty, but my impression is that it was not until Lord Jellicoe, on becoming First Sea Lord and realising the trouble, put his foot down, that the task of completing the reorganisation of the Fleet for war made considerable headway. Lord Fisher, it is true, speeded matters up, but he was at the Admiralty only for a short period; when he left the routine was re-established and the administration lumbered along slowly, to the despair of many officers who realised what was needed. Lord Jellicoe returned to the Admiralty as First Sea Lord to find that the administration had been slowed down at a period when the enemy submarine campaign threatened every British interest. With a strong hand he wrenched the Admiralty from its conservative ways and, as Admiral Sims has told us, the orders which he gave for auxiliary craft and tens of thousands of mines, and the encouragement which he lent to scientists enabled us to master the greatest menace which had ever threatened not merely the British Fleet, but the British Empire.

War is the supreme test of a naval administration, and under that test the routine system of the Admiralty, which is slow, was found wanting. Napoleon once declared: "Strategy is the art of making use of time and space. I am less chary," he added, "of the latter than the former. Space we can recover—*but time never.*" Because Admiralty administration is deplorably slow, it proved unsuited to war, and the nation owes much to Lord Fisher and Lord Jellicoe for their efforts to speed matters up, for in war the enemy does not wait on the convenience of a Government department in which almost every one, civil and naval, is nervous of taking responsibility and acting swiftly and decisively. Successful war-making depends in a large degree on time-saving —rapid, decisive action. The country suffered unnecessarily, and the war was unduly prolonged because that principle was so often ignored.

It is for the country to decide whether the Admiralty shall fall back into its old ways. The policy of circumlocution and delay lies at the base of our bad administration, and not, I am afraid, by any means at the Admiralty only or at the Admiralty conspicuously. At any rate, writing of things I know at first hand, I am convinced we can never hope to obtain a Fleet well equipped, well organised, and well trained, until this system of evading responsibility at the Admiralty is broken, the circulation of papers is speeded up, and the official who shirks responsibility is made to suffer, instead of being promoted as "a safe man." Individually Civil Servants are men of wide interests whom it is a pleasure to meet, but the system of the Civil Service is, in my opinion, a public danger. This book has been written in vain if it does not carry conviction that our naval administration is based on wrong principles.

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FIFTY YEARS IN THE ROYAL NAVY

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CHAPTER I

ENTRY INTO THE NAVY

Entry into the Navy—Life in the *Britannia*—My First Sea-going Ship—A Sailing Passage to Bombay—Discipline on Board—Chasing Slave Dhows—The Slave Market at Zanzibar—Lessons in Seamanship—Gazetted Sub-Lieutenant—With H.M.S. *Active* on the West Coast of Africa—Life on Ascension Island—A Punitive Expedition up the Congo—A Successful Operation—More River Expeditions—On Board the Guardship at Cowes—An Incident of the Crimea.

The association of my family with the Royal Navy goes back for four generations; my great-grandfather was a captain in the Service. My grandfather was a doctor and a man, I believe, of considerable talent. He attempted some innovations in surgery—an art which has, of course, been revolutionised since his time; but the medical profession in those days did not welcome any departure from their recognised and often primitive methods. His inventions included some instruments for assisting the deaf, which I understand came into general use after his death. In the course of my career I was to experience the same sort of attitude on the part of those in authority, and I have sometimes reflected with a passing bitterness how little the obstructive attitude of one generation in such matters differs from that of another.

My father was a solicitor, a good linguist and an ex-

cellent public speaker. Foreign business—or the gaming-tables—took him to Baden Baden once a year, and I am told that he was a perfect loser. He was always very good to me and gave me advice that has been invaluable. It was a principle with him never to make a fuss about anything, and he impressed upon me that every occurrence, whatever it might be, should be taken with imperturbable quiet. He would quote that passage from "Pelham" who declares that among the properly educated a calm pervaded all their habits and actions, whereas the vulgar could take neither a spoon nor an affront without making an amazing noise about it. In discussing my future career, he would point out to me that in a household a fussy person could only disturb the few inmates, but in a ship one fussy person might disturb what was equivalent to a whole village. How true I have found that statement in H.M. Navy! His ideas on education were as quaint as those which exist at some of our large English schools and colleges. He wanted me to be taught only Latin and Greek, as he declared that those languages were the foundation of everything. I read Cæsar with him, and having won the first prize at my dame's school, thought I knew something. Then I went on to the University College School and continued to thrive on Latin and Greek.

At 11½ years of age I got a nomination for the Navy and was sent to Eastman's Naval Academy at Portsmouth. I shall never forget my first interview with the Headmaster. He asked me what I knew. I rather proudly replied that I had done "As in Presenti, Propria qui maribus, Cæsar, and had started Ovid." He told me that they required living languages in the Navy, and that I was dreadfully backward in all useful subjects. He added that I should have to work half my playtime, and even then he doubted if I should be able to pass the

qualifying naval examination. Subsequently he took a great interest in me, was most kind in helping me with my extra lessons, and a month before the examination prophesied that I was sure to pass.

The exciting day for us all at length arrived, and about a hundred little boys presented themselves at the Royal Naval College, Portsmouth, for examination. A week afterwards I was gazetted a naval cadet in H.M. Navy. Sixty-four had passed in. I was forty-sixth on the list and one place above me was a candidate who was destined to become Field-Marshal Viscount French. Forty years later we, side by side, marched past H.M. King Edward VII at Aldershot. Sir John French (as he then was) commanded the Army and I the Naval Brigade.

Before joining the *Britannia* we naval cadets were given a month's leave. My father thought it would be a good thing for me to see something of the war then in progress between Prussia and Austria, so he took me to Germany. The Prussians entered Wiesbaden the day we arrived. The next morning all the sentry boxes and flag-staves were painted black and white instead of red and white, and the Black Eagle was flying everywhere. In another town near where a battle had been fought we saw a large square full of wounded men and prisoners. Thus at the age of thirteen I was an eye-witness of some of the effects of war.

On the 26th August, 1866, I went to Dartmouth and joined H.M.S. *Britannia*. She was an old three-decker, fitted with a large mess-room for the cadets. We each had a sea chest and we slept in hammocks. The decks were well saturated with salt water every morning, summer and winter, and the authorities considered that this hardened the cadets. Possibly it did; at any rate it weeded out those who were not strong.

We were kept in very good discipline. The birch was used freely. It was administered publicly with great ceremony, and was the only punishment that incorrigible boys did not like. No idea of disgrace was attached to it, but it hurt. How stupid it is to talk of doing away with the birch at our public schools! In a large community of boys there will always be a small percentage of very black sheep who have no good side to their nature to appeal to, and who, unless well birched, will encourage other boys to follow their bad example.

Shortly after I joined it was rumoured that the damp and evil-smelling old ship was not a suitable home for boys of between thirteen and fourteen years of age, and that she was to be done away with. The Commissioners of the Admiralty considered the question, and successive Boards discussed it, but as the matter was important they did not act hastily—their deliberations, in fact, extended over about thirty years. Finally, in 1898, work was begun on a college on shore in place of the *Britannia,* and the old ship of many memories was doomed.

On leaving the *Brittania* I joined H.M.S. *Bristol,* a 50-gun frigate; she was employed as a sea-going training ship. From there, on the 25th August, 1868, I went to my first real sea-going ship, the *Forte,* a 50-gun frigate of 2,364 tons. She had engines, but of such small horsepower that they were only serviceable in a flat calm.

We started from Sheerness, and *en route* to Portsmouth we youngsters were fortunately introduced under sail to a gale of wind. Four hours on deck, close-reefing the topsails and clearing away broken spars, probably cured every one of sea-sickness for the remainder of their lives—at any rate, it cured me. An excitement of this sort is, I believe, the only cure for sea-sickness. We

got to Spithead, and we midshipmen were delighted at being turned out in the middle of the night for a collision. Colliding with or being rammed by another ship, or ramming another ship, is a necessary part of an officer's education. In this case the barque *Blanche Maria* had got across our bows, at the change of the tide. There was a lot of crunching, but eventually we got clear without much damage. The *Blanche Maria* said that we had given her a foul berth; we declared she had dragged her anchor. However that may be, we midshipmen were all delighted at having seen a collision.

We left Portsmouth on the 2nd October, 1868, practically to make a sailing passage to Bombay, *via* the Cape of Good Hope. This we accomplished in a little over three months.

In those old sailing days in fine weather it was very delightful; a man-of-war was a gigantic yacht, scrupulously clean, for we were seldom under steam and as a consequence did not often coal. Shortage of water for the purpose of washing was our great inconvenience; our Commander, either for economy or to save the dirt of coaling, made a great fuss about the coal used for condensing. Consequently we were very often short of water for washing; water for drinking was not limited. On the main deck there was a tank with a tin cup chained to it, so that any one could get a drink. But there was a little waste, as the men did not always drain the cup dry. In order to check this, the Commander introduced what was called a "suck-tap"; the tap and the cup were done away with and a pipe placed in lieu of these, and any one wanting a drink had to take the nasty lead pipe into his mouth and suck the water up; it was a beastly idea, which our new Commander immediately did away with.

In the evening the men always sang, and it was very

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fine to hear a chorus of about 800 men and boys, many of the latter with unbroken voices. We had one young man who used to sing "A che' la morte" and other tenor songs from Verdi's operas, as well as many singers that I have heard on the stage. The songs, however, were not always of this high class.

I remember one or two lines of a very popular song called "Mr. Buggins' Ball." The song, in referring to the guests, described the dress of one:

"Round 'is arm 'e 'ad some crep'on,
'Cause 'is wife was dead, poor soul;
Round 'is waist 'e 'ad an apron,
Because 'is breeches 'ad a 'ole."

We midshipmen knew all the men's songs, and their parlance, which was sometimes strong; many of their comparisons and similes were often witty and quite original.

During the Great War some people seemed to think that milk, butter, cheese and vegetables were necessities of life. In my first ship there were about 750 men and boys in the perfection of health and strength. Their rations at sea consisted of salt beef, salt pork, pea soup, tea, cocoa and biscuit, the last named generally full of insects called weevils. Later on, preserved beef was introduced; it was issued in tins, very convenient for making into paint pots and other receptacles. Its official name was "Soup and bouilli"; the bluejackets called it by various names—"soup and bullion," "two buckets of water and one onion," or it was called "bully beef," but the most comman name was "Fanny Adams." At the time of the introduction of this preserved meat into the Navy, a girl called Fanny Adams disappeared, and a story got afloat that she had been tinned, or as the Americans would say canned. To this day the tins

which contain preserved meat, and which are utilised for all sorts of purposes, are called "Fanny's."

En route we found out what a magnificent seaman our Captain, John Hobhouse Alexander, was, and what a bully we had in our Commander. We midshipmen had a terrible time with the latter. I contradicted him once, and as I happened to be right, he never forgave me. I saw more of the masthead than I did of the gun-room mess. Sending a boy to sit up at the masthead on the cross-trees was a funny kind of punishment. In fine weather with a book it was rather pleasant; in bad weather you took up a waterproof. Masthead for the midshipmen, and the cat for the men, was the Commander's motto. I saw one man receive four dozen strokes of the cat on Monday and three dozen on Saturday, and he took them without a murmur. That is the spirit which made this a great country; we love men who take punishment without flinching. This particular Commander revelled in flogging, and the sight of it seemed to be the only thing that gave him any pleasure. It was a form of self-indulgence which finally led to his ruin.

On arrival at Bombay, Captain Alexander went home. We became the Senior Officer's ship on the East Indies Station, and flew the broad pennant of Commodore Sir Leopold Heath, K.C.B. He was a clever, kind and able seaman. He made me his A.D.C., an honour which I appreciated, but which got me into further trouble with the Commander, as he did not approve of it. I had more leave stopped than ever and was continually under punishment. However, an end came to it all under the following circumstances. While the Commodore was up country in Ceylon, an able seaman refused one morning to obey an order. The case was investigated by the Commander, and at one o'clock—two hours later—the

offender received four dozen lashes. On the Commodore's return the man laid his case before him, and complained that the King's Regulations, which order commanding officers not to inflict corporal punishment until twenty-four hours after the offence, had not been observed. The Commander was tried by court-martial and dismissed the ship.

We spent a good deal of time on the East Coast of Arabia, looking for slave dhows, but only caught one. She was a *small* craft about 40 feet long, but had on board a crew of five Arabs and eighty slaves, consisting of ten youths, twelve women, thirty-seven girls, twenty boys and one baby. Those wretched beings were naked and horribly emaciated, and had been so crowded that most of them during their eighteen days' voyage had not moved from the position they were packed into. We took the slaves on board, washed and fed them and dressed them in some sort of clothes and then, having landed the Arabs, used the dhow as a target. We opened fire on her with all our guns, but expended a quarter's allowance of ammunition without result and finally sank her by ramming. This was my first lesson in gunnery.

The eighty slaves had come from a village a few miles north of Zanzibar. While the men were away fighting another tribe, the Arabs had swept down and marched off all their women and children, embarking them for the Persian Gulf, where they would have got, on an average, about £20 a head for them. The baby slave was rather a difficulty, as none of the women would look after it, but the boatswain made a sort of cradle for it, a feeding arrangement was extemporised, and the child did very well. We eventually landed the whole eighty at Aden, and got prize bounty at the rate of £5 apiece for them. A midshipman's share of the prize was £1 4*s.* 6*d.*

At Zanzibar the slave market was in full swing. It was quite a large place in which all the slaves sat round in concentric circles, with spaces in between so that the buyer could pass through and inspect them. They were arranged according to their "chop," or quality. A first "chop" man meant extremely good physique and youth. The women were divided into two classes, those destined for work and those suitable for adorning an Arab's harem; a nicely rounded-off maiden of eighteen or twenty years could not be bought under about £40. It was a loathsome sight to see the rich old Arabs inspecting these girls as though they were so much merchandise. The Arabs looked dirty and generally had horribly diseased eyes, upon which the flies settled; they were too lazy to brush them off. When I visited Zanzibar thirty years afterwards I found that an English cathedral had been erected on the site of the slave market.

In chasing one dhow we went too near the shore and bumped on a coral reef, whereby all our false keel was knocked off and we leaked badly for the remainder of the commission.

Our new Commander was a great success. He gave us midshipmen plenty of boat-sailing, took us on shore to play cricket, and encouraged sport of every kind. He made us dress properly, and in appearance set us a fine example. He took a long time over his toilet, but when he did emerge from his cabin it was a beautiful sight, though he might have worn a few less rings on his fingers.

The ship he absolutely transformed. All the blacking was scraped off the masts and spars, and canary-yellow substituted. The quarter-deck was adorned with carving and gilt, the coamings of the hatchways were all faced with satin-wood, the gun-carriages were French-polished, and the shot were painted blue with a gold band round them and white top. Of course we could not have

got these shot into the guns had we wanted to fight, but that was nothing. Some years afterwards the Admiralty issued an order forbidding the painting of shot and shell.

In a sailing ship the midshipmen were brought into very close contact with the seamen, always working with them aloft, on deck, and in boats. This I think was a most desirable practice, as the officers acquired at an early age that knowledge of the men's customs and ideas which is really the key to managing them. If officers nowadays knew more about their men there would be fewer defaulters.

One thing I learnt was how the sailor hated Sunday. When he was turned out in the morning it was—hurry out, it is Sunday; hurry over dressing, it is Sunday; hurry over breakfast, it is Sunday; get out of this, it is Sunday. At 9 A.M. he was fallen-in on deck and his clothes were inspected by his Lieutenant, whereby he might get into trouble. Then the Captain walked round and inspected clothes, and he again ran the risk of something being wrong with his uniform. Then the Captain went below and inspected every hole and corner of the ship. This occupied about two hours, during which the men were left standing on deck. At 11 o'clock there was church, which generally was not over until after 12, so the men got a cold dinner.

I learnt from the men what a godsend it would be to them if they could only get an hour on Sunday mornings to write letters, and when I became a Captain I arranged for church always to be over by 11 o'clock. By this means the men got an hour to themselves, a hot dinner, and a peaceful Sunday. It is a pity that all ships do not adopt this routine.

In those days there were widely different opinions about uniform, and great trouble was caused. Some

Captains encouraged men to ornament their clothes with embroidery; others did not like it, so men had to cut it out again if they went from one ship to another. Some Captains allowed their officers to wear any fancy uniform they liked; others insisted on their wearing a blue frock-coat, even on the West Coast of Africa. One Admiral always wore a white billycock hat instead of a uniform cap; another wore a tall white Ascot hat. There was no promotion by merit, all went by patronage. Every Admiral on hauling down his flag was allowed to make his Flag Lieutenant into a Commander, and if a death vacancy occurred on his station he could promote whom he liked—generally a relative. Admiral Fremantle, in his memoirs, says: "The young officer so promoted often had no merit, and his promotion was a gross injustice to those senior to him."[1] This was the general opinion in the Navy, but the abuse continued until about 1880.

Our gunroom was sometimes conducted very well. The youngsters who misbehaved themselves were tried by the seniors, and if found guilty "cobbed," that is, got two dozen smacks with a dirk scabbard. If they had been reported to the Captain they would have lost time, and their careers in the Navy would, perhaps, have been spoiled. The gun-room corrective while in operation hurt the boy; the service punishment hurt his career and brought grief to his parents.

At Trincomalee we transferred the flag to another frigate of 51 tons, the *Glasgow,* and started under sail on our homeward voyage of about 12,999 miles.

The night before reaching Sheerness, off Dungeness, we had our second collision; a steamer ran into us and did a good deal of damage. Had we been a merchant ship instead of a strongly built frigate, we should have

[1] "The Navy as I have known it" (Cassell & Co.).

been sunk. The steamer did not stop to ask how we were, but made off as fast as she could. The Admiralty had great difficulty in tracing her, but they eventually got her.

On the 17th February, 1872, we paid off, having been in commission for three and a half years. To the midshipmen it was a sound three and a half years' education in seamanship and in travel. We had seen the ship twice go on shore, and twice in a collision. This constituted my introduction to the old Navy of the sailing-ship days. Little did I think that I was to live to see every familiar thing disappear, and to watch the growth of a new Navy, with marine turbines, high-powered guns, automobile torpedoes, and to discuss the relative value of the Dreadnought and the submarine.

At the expiration of my six weeks' leave, I joined H.M.S. *Hercules*. She was our most modern armoured ship, and carried fourteen 18-ton guns. She could steam well, and the only blot on her fighting capacity was that she had masts and sails. The Navy did not in fact abandon these relics of a past age till thirty years later: it was thought to be a policy of economy, but it was in fact one of real extravagance and folly. I was Signal Midshipman, and as we did a good deal of manœuvring I got some education in that branch. Nothing of interest happened during the year that I was in her, except that I experienced a third collision. At Madeira the *Northumberland* anchored ahead of us and parted her cable. She fell across our ram, and we made a hole in her that a horse and cart could have been driven into. Fortunately the inner bottom saved her.

I was gazetted a Sub-Lieutenant on the 17th December, 1872, and went to the *Excellent* and the Naval College at Portsmouth to complete my examinations. By July, 1873, these were finished, and as the Ashantee War

had broken out, I volunteered for service on the West Coast of Africa. Commodore William Nathan Wrighte Hewett, V.C., was going out in the 10-gun screw frigate *Active,* and he applied for me. There was, however, no room for me in the ship, as she had already twelve sub-lieutenants on board, so I took passage out in a hospital ship and joined the *Active* at Cape Coast Castle. I was distressed that I could not land with the Naval Brigade; however, we people who were left at the base had a busy time of it.

Sir Garnet Wolseley, who conducted the campaign, arrived at Cape Coast Castle early in October, and found that the Navy had done a great deal to prepare the way for him. We understood that this was his reason for taking a Naval Brigade with him, leaving some of the troops behind.

In December plenty of troops had arrived, but the advance was delayed by the difficulty of getting carriers, for the roads were impassable for vehicles or mules. Each man carried 70 lbs., a woman 40 lbs., and a child 15 to 20 lbs. for a distance of seven miles. One woman gave birth to a baby *en route;* she put it in the bush. On her return she picked it up, placed it in her empty packing case with a bunch of bananas, and arrived at Cape Coast Castle, smoking and smiling, with the packing case, bananas, and baby on her head.

The Naval Brigade, under Commodore Hewett, V.C., landed at the end of December, and on the 6th February, Coomassie was entered and burned, and peace followed on the 13th.

In the engagements, Lieutenant A. B. Crosbie, R.M.L.I., Sub-Lieutenants Gerald Maltby and Wyatt Rawson were wounded, and Sub-Lieutenant Robert Munday was killed. Sub-Lieutenants Ficklin and Bradshaw

died of fever. Each of these three young officers was an only son.

In this campaign the *Active* received the following promotions and honours: Commodore W. N. W. Hewett, V.C., to be K.C.B., Staff-Surgeon Henry Fegan to be C.B., and Lieutenant Adolphus Brett Crosbie was "mentioned."

At the conclusion of the campaign I broke my leg, and was sent to hospital at the island of Ascension. I soon got well, but could not go back to my ship, so I had an opportunity of studying this unique island. It is treated like a man-of-war; it has a captain, officers and crew, with a few of their wives, but no other inhabitants. If a baby is born on the island, its name is put on the books and provisions allowed for it by the Admiralty. There are no shops, but certain things can be purchased at a canteen, and you buy your clothes from the Cape of Good Hope, 1600 miles distant. All the lower part of the island are lava and clinker. In the centre stands Green Mountain, a peak of cinder, from whose summit you look down on the craters of about a dozen extinct volcanoes. On the mountain the cinders, decomposing under the tropical sun's rays, have produced a rich soil in which everything will flourish. I was told that if you put your umbrella in the ground it would grow.

The energetic naval inhabitants had put down pheasants, partridges, and rabbits, and there were about six hundred wild goats. I should think they are there now, as they are very difficult to shoot. I spent all day and every day stalking them, but got very few.

We annexed the island when Napoleon went to St. Helena, and the expense of keeping it up has often been discussed. At the time we were there the question of fortifying it was submitted to our Commodore. We were told he was very much against the proposal, and

he suggested withdrawing all the naval officers and men from the island and leasing it to Messrs. Spiers and Pond for the turtle, about three hundred and sixty of which were turned in the year. They would have gladdened the eyes of any City alderman.

The remaining part of 1874 brought the *Active* some lively work. We got information that a trading schooner, the *Geraldine,* while beating up the Congo River, had got on shore, and had fallen a victim to the pirates who infested the river. The bandits had boarded the vessel, killed the crew, and looted her. We went off at once at full speed and anchored in the delta of the Congo.

On the following day, the Commodore, with a small party of officers, proceeded up the river in a gunboat. We inspected the *Geraldine,* and found she had been gutted; the pirates had even commenced stripping the copper off her bottom. We then went on to a trading station about forty miles up, and all the native chiefs were summoned to a palaver.

They arrived, armed, in war canoes; we had journeyed up without arms, notwithstanding the apprehensions of the traders. Sir William Hewett, however, did not know the meaning of fear. Through our interpreter, he told them that unless they produced at once the murderers, he would later on, in the dry season, return and burn every village from the mouth of the Congo to where we were then. The chiefs refused to give up the murderers (a decision which pleased us young officers), so we returned to the *Active,* and for the next few months were busy with preparations. All boats were plated with one-eighth inch steel plate from the gunwale two feet up; guns, rockets, provisions, and transport were provided.

At the end of August, the whole squadron, consisting of the *Active, Encounter, Spiteful, Merlin, Foam,* and

Aerial, arrived in the Congo, and the chiefs were again asked to surrender the murderers. No reply being received, hostilities were begun, and from the 30th of August to the 12th September, we were busy every day attacking their villages and burning them. The villages were generally situated up a creek off the river, and these creeks were so overgrown with vegetation, that we had often to cut our way through, all the time keeping up a brisk musketry fire into the bush. The method of procedure was simple. On nearing a village the boats carrying the guns shelled the place all round as a preliminary to the landing of the marines,[1] who formed a cordon and fired into the bush, while the remainder of the brigade disembarked. An advance was then made, firing the whole time. The villages were generally found deserted and a search usually revealed some relic of the *Geraldine.* Such operations ended with the destruction of the village and canoes by fire. Thus Sir William Hewett kept his promise of burning everything from the entrance of the river to Punta-da-Lenha. The lesson effectually stopped piracy, and increased trade in the river.

At some of the villages the natives fired a great deal, but our entire loss was only one killed and six wounded. The forethought of the Commodore in armouring our boats saved a great many casualties, as slugs discharged by the natives were harmless against the steel plating.

I had command of the largest steamboat in our flotilla. She was towed over from Ascension. Our broadside fire was twenty-five marines on each side, under the most able officer that I have ever met in H.M. Navy, Lieutenant Adolphus Crosbie, R.M.L.I. We were always the leading boat in attacking and the last boat on leaving. The ma-

[1] This was practically an artillery barrage, which, thought to be new in 1917, was used in 1874.

rines were magnificent. At the boom of a volley from the natives in the bush, which might have meant death to them (as they were showing well above the armour-plating), we always ducked. The marines, on the other hand, did not move a muscle, but came to the present at Crosbie's order as if they were doing position drill.

At night the boat was sometimes a very trying place to live in. Anchored up a creek, with a rain awning over the top of the armour plating, no fresh air could get in or foul air out, and the total of seventy occupants inside, including thirty black men, worked out at about ten cubic feet per man—a condition which is, I understand, according to the laws of hygiene, impossible for a human being to live in. We managed to live, but it was not pleasant, and I was always glad when the morning came. We should have liked to bathe, but as a crocodile rose to everything that was thrown overboard bathing was not permissible. The hippopotami during the night were a source of annoyance; they breathe so noisily through their wide-opened mouths. But though they came very near the boats they did no harm.

After leaving the river the whole squadron suffered terribly from malarial poisoning, and two officers and many men died, besides a large number who were invalided.

Their Lordships the Commissioners of the Admiralty signified their appreciation of the expedition by making the following promotions: Sub-Lieutenant Percy Scott to be Lieutenant, and Sub-Lieutenant A. C. Middlemas to be Lieutenant.

In November, 1875, at Lagos, Commander Verney Lovett Cameron came on board the ship, having just completed a walk across Africa from sea to sea. He started from Zanzibar in 1873 with two companions, to visit Dr. Livingstone. It was their ill fate to find the

famous explorer dead. Captain Cameron completed his long walk alone, his companion turning back. His walk as the crow flies was 2000 miles; by the route he took it was 3000 miles. As the Americans say, it was some walk!

Whereas 1874 and 1875 had produced plenty of expeditions and promotions for the *Active,* 1876 opened peacefully, and the sub-lieutenants who had recently joined complained of the humdrum state of affairs. They had not long to wait for a change. Before the end of January a letter arrived from the Governor of Lagos, stating that the King of Dahomey had been maltreating British subjects, and asking for Naval assistance. The Commodore—a man of action, if ever there was one—gave us twenty-four hours to coal, provision, and fill up with ammunition, and we were off at full speed for Whydah, the port of Dahomey. We arrived there in February, inquired into the case, and the King of Dahomey was ordered to pay a fine of 500 barrels of palm oil within three months on the pain of a blockade of his coast. The fine was not forthcoming, and the 1st July found us once more anchored off Whydah with H.M.S. *Spiteful* and H.M. Gunboat *Ariel,* and a blockade was declared.

The Commodore was full of fight, and "taking Dahomey" was the only topic of conversation. But we hung about Whydah for some time waiting in vain for the authorities at home to make up their minds as to what was to be done. The golden opportunity of seizing Dahomey was lost and, as subsequent events proved, the task fell to the lot of the French.

Whydah was not a very nice place to blockade, as it is situated in about the hottest part of the coast of Africa, and we were overjoyed when one day a steamer came along with a signal flying—"Important dispatch

for you." The dispatch was sent for, and in ten minutes steam was ordered for full speed and preparations were at once commenced for a landing party on a large scale.

What the official instructions disclosed was that an English steamer had been attacked by natives in the River Niger. The steamer had engaged in regular trade up the river to the resentment of the natives, who were determined to capture her. Their method of attack was ingenious. As soon as the vessel had passed the village of Akado, they prepared for her return by stretching a rope across the river—150 yards at this spot—well securing the ends of it round trees on the bank. I saw a piece of this rope later and found it to have been made of strong fibre plaited together so as to form a cable about eight inches in diameter. It was kept on the surface by large cotton-wood floats.

In due course the steamer returned, and tried to steam through the obstruction. The rope, however, stopped her, and immediately a murderous fire from cannon and small arms was opened on her and some of the crew were killed. Fortunately the captain managed to cut the rope and the vessel got clear.

We arrived off the mouth of the Niger on the 27th July, 1876, and our landing party, with guns and rockets, were transferred to the gunboats *Cygnet* and *Ariel*. The guns and their crews were put on board the local steamer *Sultan of Sokato*. On the following day the three ships proceeded up the river to Akado, and found the ends of the hawser, some well-dug rifle-pits, and three small cannon. There being no sign of life, however, the little squadron moved on to the town of Sabogrega. Here, on attempting to land, the men were met by fire from rifle-pits behind strong stockades. A bombardment of the stockades was maintained throughout the night and in the morning the whole brigade were embarked in

boats and at a given signal dashed in under a heavy fire. The stockade was carried, the native force driven back, and the town burned.

Our losses were five officers wounded, one man killed and nine wounded. Among the wounded were the Commodore's secretary, Cecil Gibson, and our chaplain, the Reverend Francis Lang. They were not in the landing party, but seeing a wounded seaman on the [illegible] they pulled ashore from the gunboat in a dinghy to bring him off. A native in hiding fired at them while they were lifting the man up and wounded them both very severely.

Their Lordships marked their appreciation of this expedition in the River Niger by promoting Lieutenant Nesham to Commander, and Sub-Lieutenants Harry Reynolds, John Casement, Frank Thomas, and Bowden Triggs to Lieutenants.

We then returned to Whydah to assist in the blockade, but the Commodore, as I have said, could get no definite decision from the Government and we left for the Cape of Good Hope.

In April, 1877, our eventful commission terminated, and at Portsmouth Sir William Hewett received a great ovation. He was certainly a wonderful man. In handling a ship under sail he was a master sailor; under fire he was absolutely fearless; and his boldness and swiftness in decision were equalled by his readiness to take any and every responsibility. He had won his Victoria Cross in the Crimea, and had seen more war service than any officer in the Navy. He was too go-ahead for the Admiralty, but still, if we had gone to war, I am sure he would have been put in command of the Fleet.

At the expiration of my leave, I went for a short time to H.M.S. *Warrior*. We were guardship at Cowes, as Queen Victoria was staying at Osborne. One Sunday I had to take a dispatch to her Majesty. I had delivered

it, and was feeling very proud of entering the portals of Osborne House, when to my surprise the officer-in-waiting told me not to go, as her Majesty might wish to see me. A minute or two later he was conducting me to the lawn, where the Queen was sitting in a chair with an awning, looking through a pile of correspondence. Her Majesty questioned me about the ship, and then asked me how an officer named Hyde was getting on, and whether I knew that he lived at Osborne. I explained that my ignorance on the matter was due to the short time I had been in the ship. On my return I told Hyde, and he said he and his brother had lived at Osborne under the Queen's protection all their lives. His story was a strange one. During the Crimean War the Naval Brigade in returning to the coast passed the scene of a massacre of some men, women, and children. All were dead except two very young boys, who were dreadfully wounded. The sailors picked them up, took them to their ship, and they gradually recovered. The question then arose what was to be done with them, and her Majesty solved the case by ordering them to be sent to England and housing them at Osborne. They were called Hyde after the captain of the ship which brought them here. Her Majesty had them educated at the Royal Naval School, New Cross, and they eventually joined the Navy as clerks, and both became assistant paymasters.

CHAPTER II

A CRUISE ROUND THE WORLD

Admiralty Attitude towards Gunnery—Uselessness of Inspection—A typical Report of the Period—Course of Instruction on H.M.S. *Excellent*—Mud Island—Convict Labour—A Scheme of Drainage—Gunnery Lieutenant of H.M.S. *Inconstant*—A Training Squadron—Masts and Sails—The Young Princes as Midshipmen—The Boar War takes us to the Cape—Voyage to Australia—Parting with the *Bacchante*—Invention of an Electrical Range Transmitter—How the Admiralty regarded it—Back in Simon's Bay—A Fire on board—Putting out the Flames in a Diver's Dress.

THE gunnery of these days was deplorable, and had been so for half a century. In the American War of 1812-14, as a humiliating chapter in our naval history records, we lost ship after ship owing to the failure to practise our officers and men in the use of their guns. One fine sailor, Captain Broke, of the *Shannon,* taught his men to shoot by putting over targets two or three times a week and practising firing at them both with cannon and small arms. He subsequently inflicted on the Americans their first defeat; it was by sheer good shooting that the *Shannon* beat the *Chesapeake.*

This demonstration of what good gunnery could achieve ought to have brought about an immediate reform, but it was not until fifteen years after the end of the war that the first real step was taken to educate the officers and men in using their guns.. In 1830, the Commissioners of the Admiralty decided tentatively to allow H.M.S. *Excellent,* an old 74-gun line of battleship at Portsmouth, to be used as a school for instruction in artillery. From 1830 to this date the Gunnery School at Portsmouth has rendered yeoman service to the country

by endeavouring, against great opposition, to improve the shooting of H.M. ships of war. In the Navy, at the time I am speaking of, a knowledge of gunnery was looked upon merely as an adjunct to, and not as a necessary part of, an officer's education. Those who knew nothing of gunnery, and even boasted of the fact, laid the flattering unction to their souls that they were practical seamen. Gunnery officers were laughed at as mere pedants and coiners of long words. Admiral of the Fleet Sir Edward Seymour, in talking of the Navy in 1852, says, "In those days the chief things required in a man-of-war were smart men aloft, cleanliness of the ship, the men's bedding and her boats. Her gunnery was quite a secondary thing."[1]

This view of what was needed in a man-of-war survived in the Navy for half a century after the date referred to by Sir Edward Seymour. For many years the all-important event in each year of a ship's commission was her inspection by the Admiral, for if the ship was not clean, the Captain would be superseded and the Executive Officer would not be promoted. Gunnery did not matter. The inspection report that went to the Admiralty was in the form of a printed set of questions which the Admiral had to answer, but it abstained from all allusion to the state of efficiency or otherwise of the ship in target practice with her guns. Questions on this subject were not added to the report until the year 1903.

Admiral Sir Cyprian Bridge, in his book "Some Recollections" (published in 1918), describes his ship, the *Pelorus,* in 1857, as one of the first vessels of the Navy to possess a gun-sight, and added that it was then considered an epoch-making improvement in naval gunnery. He tells us, further, that the gun-mountings in

[1] "My Naval Career and Travels," Sir E. H. Seymour, Admiral of the Fleet: "The State of Gunnery."

H.M.S. *Pelorus* were of a pattern practically identical with those used in Queen Elizabeth's ships, and that the type survived in the Navy for twenty years afterwards. This pattern of mounting was in use when I joined the Navy. It had a life of about four centuries, but Sir Cyprian warns us that we must not infer from this that the Admiralty were backward in introducing improvements in ships' armaments—although I point out in this volume that the Admiralty in my time have been, and still are, very backward in this respect. I cannot contradict Sir Cyprian Bridge as to the attitude of the Admiralty in 1857, but four hundred years for one pattern of gun-mounting appears a long time! It looks rather like our clinging to masts and yards forty years after they ought to have been abolished!

Sir Cyprian suggests that the stories which have been current of late years as to the want of attention to gunnery in the older Navy were unworthy fabrications. That statement hits me rather hard, because I have so frequently asserted the contrary, but in doing so I only took into consideration my own fifty years' experience in the Navy. This is the only mention that Sir Cyprian makes of gunnery. His "Recollections," like those of most of his contemporaries, consist largely of descriptions, interesting descriptions, of the places visited.

After an inspection in my early years it was customary with many Admirals to send the Captain of the ship a memorandum containing the gist of the report dispatched to the Admiralty. If the Admiral's memo. was unfavourable, it went into the waste-paper basket; if favourable, copies of it were made and circulated in the ship, and sometimes they got into the Press. Here is one copied from the *Naval and Military Record* of September, 1902.

"H.M.S. *Glory,* Wei-Hai-Wei,
3rd of September, 1901.

"I have made the following remarks in the report of the inspection of H.M.S. *Astræa,* under your command:—

" 'Ship's company of good physique, remarkably clean and well dressed; *state of bedding,* specially satisfactory.

" 'The stoker division formed a fine body of clean and well-dressed men.

" 'At exercise the men moved very smartly.

" 'The ship looks well inside and out, and is very clean throughout. Her state is very creditable to the Executive Officer, Sir Douglas Brownrigg.

" 'The tone of the ship generally seems to me to be distinctly good.

" 'Appearance of the Engine Rooms and their appendages was very good.'

"(Signed) ———,
"ADMIRAL."

This was a typical inspection of the period. It contained no reference to the fact that the *Astræa* was one of the best shooting ships in the Navy, nor did her captain and gunnery lieutenant get one word of praise for all the trouble they had taken to make the ship efficient as a fighting unit of the Fleet. It was only her success in tailoring and housemaiding and the state of the bedding that secured commendation. No wonder that the captains and gunnery officers of ships came to the conclusion that they must devote their time and attention to the appearance of ships and not to battle-worthiness.

I have referred to this inspection report to show how conservative the Navy was. Forty-nine years had not changed what Sir Edward Seymour says were the ideas in 1852; the cleanliness of the ship and the state of the men's bedding were still regarded as the most important factors of efficiency.

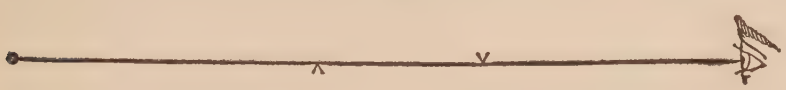
In 1878 I joined H.M.S. *Excellent* to qualify as a Gunnery Lieutenant. She was an old three-decker, very badly found as regards the necessary equipment for instruction in gunnery, so much so that a lecture there on some particular weapon generally concluded with the remark—"but this is obsolete, and we have not got the new one to show you." In those days a lieutenant qualified in gunnery was an important asset in a man-of-war. He was the only officer in the ship who knew anything about gunnery, and in an action he would have had a great responsibility.

Our course of instruction was divided into two parts —practical and theoretical. The former consisted of learning how to load and fire the guns and how to train the men, and was also concerned with powder and ammunition and projectiles. The theoretical part embraced differential and integral calculus, conic sections, algebra, chemistry, physics, and a few other subjects with long names. It was obvious that the practical part should have been taken first as, in the event of war breaking out, we thirty lieutenants could have been sent to sea with sufficient practical knowledge to manipulate the artillery. Our instructor, a most brilliant lieutenant named Tyne Ford Hammill, informed us that, although it was wrong, we had to do the theoretical course first. With a twinkle in his eye, he explained that the defect had been pointed out, and that it would be changed, but as the authorities did not move very quickly in gunnery matters it would take time. He was quite correct. The system was changed, but not till twenty-six years afterwards.

The officers of H.M.S. *Excellent* took a great interest in target practice; it was carried out from old gunboats, which were light and consequently rolled a great deal. This made the practice very difficult, and I think I can

show that in those days a good shot had to be born, he could not be made.

The man who pointed the gun and fired it stood about six feet in rear with a string in his hand which, when pulled, fired the gun. On the gun were two pieces of metal about four feet apart, one was shaped like a V, the other like a V upside down. To hit the mark the gun-layer had to pull the string when the V, the inverted V,



and the target were all seen in one line from his eye. In order to arrive at this all three must be seen very distinctly. In other words, the eye had to see three objects; one at six feet, one at ten feet, and the other at 3000 feet, all sharply defined. This called upon the eye to do more than any camera will do unless it is very much stopped down. The eye is a very fine optical instrument and has in certain circumstances sufficient range of focus to comply with the requirements I have mentioned; but it will only comply with these requirements under certain conditions of the stomach and general state of health. We will call this having the eye in order No. 1 necessity for hitting the mark. The firer in those days had orders always to fire as his gun was rolling upwards; as the roll would impart an upward movement to the shot, he had to pull the string a little before the two V's came in line with the target, but the roll varied, so the "little before" varied and he had to judge how much to allow. We will call this No. 2 necessity for hitting the mark.

Then came the forward motion of the ship from which the man was firing. This would cause the shot to go forward and miss the mark, so he had to have his V's a

little behind the target when he pulled the string. This is No. 3 necessity for hitting the mark. To acquire and put into practice correctly these three requirements appears impossible, but I have seen men place shot after shot within a foot of a small flagstaff 1000 yards distant from them. Truly the brain and eye can work together in a wonderful manner.

Of many hundreds of seamen whom we trained in shooting, one or two per cent. could do what I have mentioned. The objective of the staff officers of H.M.S. *Excellent* was to find some rules or means of instruction that would increase the percentage of these men, but we landed on another difficulty which quite stumped us.

A lieutenant—I wish I could remember his name—pointed out that some men for the same amount of roll fired earlier than others, but obtained the same results; in other words, that some men when they did a thing did it quicker than others.

A very clever torpedo lieutenant of H.M.S. *Vernon* took the matter up and declared that a certain amount of time elapsed between the man at the end of the string wishing to pull it and his actually pulling it; he described it to me that the eye when the objects were in line telegraphed to the brain that the string was to be pulled, the brain telegraphed to the muscles of the hand to pull it, and he pointed o..t that these two telegraphs occupied a certain amount of time, and that this amount of time varied with different peoeple. To prove his theory a machine was made—I think it was called the personal error machine. Captain (afterwards Lord) Fisher, in explaining it to Queen Alexandra, called it the Foolometre, as he said it measured how much of a fool you were; you thought you did a thing instantaneously but you did not, and this machine registered how much time elapsed between your thinking you had done a thing and

your doing it. The machine was very simple, as far as my memory serves me, and it is forty years ago. The person being tested was told to pull a string when he saw the pointer move of a galvanometre which was in front of him.

What happened was as follows: An electric current was sent through the galvanometre which caused the pointer to move; it also caused a mark to be made on a revolving cylinder. When the person being tested pulled the string, it caused a mark to be made on the cylinder. The distance between the two marks represented the time that elapsed between the eye seeing the pointer move and the hand pulling the string.

This little lecture shows that the man who pulled the string, or, as he was more commonly called, the man behind the gun, had a lot to think about.

The whole gunnery establishment consisted of two line-of-battle ships (the *Excellent* being connected by a bridge with the *Calcutta*), a very old turret ship in which we learned turret drill, some gunboats which, as I have said, took us out for target practice, and an island where we were taught infantry drill.

This island—Whale Island—which we very appropriately called "Mud Island," has had a peculiar history. In 1856 it was acquired by the Admiralty, and subsequently was used as a dumping-ground for the mud and clay which was excavated in forming the basins and docks of Portsmouth Dockyard. One party of convicts in the dockyard were employed in digging the clay and barrowing it into railway trucks, which went by a viaduct to Whale Island, where another party of convicts emptied them. The whole island, which is now of nearly 100 acres, has therefore been twice in a wheelbarrow; it seems almost too colossal to believe, but, as nearly 1000 convicts were working at it for about forty years,

they would move a very large amount. In depositing the mud, no attempt was made to level it, or to allow it to drain itself; and consequently the whole place was a quagmire, only available for drill after a long spell of dry weather. One small portion which had been gravelled was capable of being used at any time.

Being in those days anxious to keep in training for running, I got the convicts to smooth down a track about four feet broad and a quarter of a mile round. They took great interest in it, filled up the hollows, made little drains, and planted on it every blade of grass they could secure. They even arranged with their fellow convicts in the dockyards to collect carefully any grass they could find and send it over. In a fortnight we had quite a decent track. We then sowed it with grass seed, and when it was sufficiently advanced, a party of about fifteen of us used to go up to the island at five in the morning to cut and roll it. It got on so well that we were able to have athletic sports. The success of the track suggested to me that the whole might be levelled and drained, the *Excellent* done away with, and a Gunnery Establishment built on the island. The ship was rotten and would soon have had to be replaced by another; the expense of keeping her up was enormous, and she was unsuitable in every way as a School of Gunnery. I mentioned the idea to the authorities, and they thought I had gone mad. It was considered to be the most ridiculous idea ever put forward. "He wants us to live on Mud Island," was the common chaff, and I could only retort that some day the desire of all officers would be to live on Mud Island. Events justified my prophecy, and I was destined to return to Whale Island to superintend the work of construction which was to transform the mud flats into a great naval establishment.

As to the *Excellent,* the one notable feature of the

School of Instruction was the diligence of the officers and their zeal in striving against a sea of opposition to improve the gunnery of H.M. Navy.

Having completed the course, I served for a year as an Instructing Lieutenant, and then went to sea as Gunnery Lieutenant of H.M.S. *Inconstant,* flagship of the Earl of Clanwilliam. The squadron consisted of the *Inconstant, Bacchante, Diamond* and *Topase,* all fully-rigged sailing ships. Prince Albert Victor and Prince George (now King George V) were serving as midshipmen in the *Bacchante.*

The particular object of the squadron was to train officers and men in the use of masts and sails, which were very shortly to disappear and really should have disappeared ten years before, since they hampered a ship in speed, and would have been a severe encumbrance in an action. They certainly afforded a fine gymnasium both for nerve and body, and inculcated thought and resourcefulness, which were most valuable to men afterwards. The sailoring sailor was not a machine. You could teach him a certain amount, but he was always having to use his brain to meet unexpected difficulties as they presented themselves.

As a boy in the training ship he was taught how to furl a sail on a jack-yard close down to the deck. He found the yard laid pointing to the wind, clewlines close up, and the sail, from constant handling, as soft as a pocket handkerchief. How easy it all was! Then he went to sea and discovered the difference. On a dark night, with the ship rolling, he was awakened from his slumbers by a scream "Topmen of the watch in royals." In a pouring rain squall he had to feel his way aloft to a yard 130 feet above the deck. And when he and his mates got there what a contrast to the training ship jack-yard! The sail is all aback, wet and as stiff as a board,

the clewlines have fouled, and perhaps one lift has carried away. But the sail has to be furled, and they think out some way of overcoming the difficulties and furled it is. Fine training for a boy, although it cost a good many lives!

The question of doing away with the masts and sails was the theme of much discussion. Those who favoured their abolition said that as we should have no sails it was no use wasting time, money and life, in training our officers and men to use them. My gallant Captain declared that if you wanted to make a jockey like Tod Sloan you did not train him on a camel. What the arguments were of those who wished to retain masts and yards I do not exactly remember, but they got their way, and the sinking of the *Captain, Eurydice* and *Atalanta,* with a total of about 2000 officers and men in the prime of life, failed to alter their opinion. Sails were not finally discarded until after the sloop *Condor* went down in a gale off Cape Flattery on 3rd December, 1901.

On the 16th October, 1880, we left Portsmouth for a cruise round the world. The programme was to visit Madeira, St. Vincent, Monte Video, and the Falkland Islands, then sail round the Horn to India, and return home by the Suez Canal. The young Princes were to see the world. We arrived at Monte Video on the 21st December, and remained there until the 8th January, the time being spent in entertainments of every description. The Uruguayans are noted for their hospitality.

Four days before we left for the Falkland Islands, a telegram was sent by the Admiralty, ordering us to proceed to the Cape of Good Hope at full speed, and to prepare our brigade for landing, as we were at war with the Boers. The gentleman on shore who received this telegram put it in his pocket and forgot to open it until after we had left, so away we went 1400 miles in a

southerly direction instead of going east where we were wanted.

When at length the telegram was opened at Monte Video, a gunboat, the *Swallow,* was despatched with orders to try and catch us. The speed of the *Swallow* did not quite do justice to her name. We reached the Falkland Islands on the 25th January; the *Swallow* arrived the following day, and our Admiral the Earl of Clanwilliam at once made a signal "Prepare for immediately. Squadron is ordered to proceed to the Cape of Good Hope with all dispatch." During our 4000 miles' voyage to the Cape of twenty-two days, all preparations for landing an expeditionary force were made. The men were drilled and exercised in firing, our field guns were got ready to land, and we could have put into the field a very respectable force of about 1600 men.

On the 16th February we arrived at the Cape of Good Hope and found that in December, when we were enjoying ourselves at Monte Video, the Boers had declared war upon us, and as we were, as usual, unprepared they had been successful in several engagements. In these circumstances we doubled our efforts to make our brigade efficient for landing, and hourly expected a telegram to proceed to Natal and co-operate with the forces there, for the military authorities were very short of men and our 1600 might have turned the scale. No more orders came, however, and we remained at Simon's Bay, enjoying dances and dinner parties while our troops suffered severe reverses at Laings Neck and Majuba.

By the middle of March Sir Evelyn Wood, who was in command, had sufficient troops to ensure the defeat of the Boers, but the British Government had meanwhile decided to make peace, and the task thus left incomplete had to be undertaken anew twenty years later.

After peace had been signed, we lingered on at the

Cape until the 9th of April, when, to the delight of every one, we weighed anchor and departed on a 5000-mile voyage to Australia. On the 12th May we arrived off Cape Lewen, and during the night encountered some very heavy weather. In the morning H.M.S. *Bacchante,* with the two young Princes on board, was missing. We spread out to search, and had a very anxious three days, when fortunately we received a signal that the *Bacchante* had put into Albany, in Western Australia, her rudder having been disabled in the gale.

A most pleasant six weeks followed at Melbourne. Just before leaving, their Royal Highnesses joined the *Inconstant,* as the *Bacchante* (which subsequently rejoined the squadron) was still under repair at Albany, and we resumed our cruise, visiting the Fiji Islands, Japan, China and Singapore.

At Singapore we said good-bye to the *Bacchante* with her royal midshipmen. She had been ordered home *via* the Suez Canal, while we were to return *via* the Cape. We had visited many interesting places and seen much of the world. It had been a sort of yachting cruise with endless entertainments. Professionally we had spent two years in learning how to manage a ship under sail, but I doubt if any officer or man of the squadron was ever again in a ship with sails. Our Captain, C. P. Fitzgerald, was probably the most able seaman in the Navy in regard to the management of sails. He could work the *Inconstant* just like a yacht; but it would be no use mentioning some of the fine work I have seen him perform, because no one now would understand or appreciate it.

In gunnery we were no worse than any other ship. We fired sometimes, but the difficulty at target practice was to communicate the range to the guns. To overcome

this obstacle I made an electrical range transmitter, and submitted it to the Admiralty in the following letter:—

"H.M.S. *Inconstant*,
"At Sea,
"3rd May, 1881.

"Sir,

"Having found great difficulty on board this ship in getting the distance of the target passed correctly from the masthead to the gun deck, I have the honour to submit plans of an Electrical Indicator which has been made on board this ship, and seems to answer the purpose satisfactorily.

"It consists of two dials, their faces marked in hundreds of yards; one is placed at the masthead or wherever the officer is stationed to measure the distance, the other in the battery, the two being connected by electric wires.

"As the distance alters, the observer at the masthead moves the pointer of his dial to the new figure; the pointer of the battery dial simultaneously makes a corresponding movement, at the same time ringing a bell.

"The arrangement is exceedingly simple, and though only roughly made on board this ship by the armourer, it works well.

"I enclose a full explanation and drawings.

"I have the honour to be, sir,
"Your obedient servant,
"Percy Scott,
"Lieut."

Fifteen months afterwards, on the 21st June, 1882, their Lordships wrote to the Admiral commanding the squadron: "You are to inform Lieutenant Percy Scott that my Lords highly appreciate the intelligence and zeal he has shown in the construction of the instrument devised by him." On my return to England, however, I found that my invention had been pirated and patented

by some one else. Necessary as an instrument of this description was for accurate firing, the Admiralty did not supply it to the Service until twenty-five years afterwards.[1]

In the middle of May we arrived at the Cape of Good Hope and anchored in Simon's Bay, which was so familiar to me. Simon's Bay was just the same as I knew it ten years before. None of the recommendations suggested by Sir William Hewett for improving the dockyard had been carried out; there was not a fort of any description, nor was there a dock or a railway in the place.

During our stay I went for a few days' leave to Cape Town. On my return I found the ship was on fire. At 8 p.m., a couple of hours earlier, dense volumes of smoke arose from one of the after compartments. It was found impossible to locate the fire, and all the ship's fire appliances and fire engines were engaged in pumping into the compartment, but as some of the water-tight manhole doors were off for repair the whole of the after part of the ship was being filled with water, and at the same time no apparent effect was produced on the flames. Efforts had also been made to get to the fire by a man wearing the German smoke cap supplied by the Admiralty for that purpose, but he was nearly asphyxiated in the attempt.

Such was the situation on my return. Putting on one of the caps, I went down myself and succeeded in discovering the seat of the outbreak. But the labour of breathing in this horrible contrivance—with its gag in the mouth and goggles that let the smoke through—left one without strength to do any work. So I came up and got into a diving dress. The dress and helmet were of

[1] This is an illustration of methods of administration in 1881; but things are not much better to-day.

LIEUT. PERCY SCOTT'S DESIGN

THE ADMIRALTY PATTERN

course very heavy, as they are made to withstand a great pressure of water, and the descent of so many ladders with this great weight was a difficult matter. However, I got down with a hose and very soon put the fire out. It had originated in one of the storerooms where there were large kegs of butter, lard, candles and the like. The butter was floating, alight, on the water, and it only needed a little water on the top of it to put an end to the mischief. But with the extinguishing of the flames the light went, and it was with some difficulty that I managed to retrace my way through the dense smoke by means of the air pipe.

During this ticklish operation the well-meaning people on top kept on pulling my rope, which is the ordinary signal to a diver to inquire if he is all right. These jerks sometimes pulled me off a ladder, and to be pulled over with one's head encased in a tremendously heavy helmet was almost enough to break one's back. Little wonder that I got back pretty nearly done up. They carried me clear of the smoke, unscrewed the face-plate of the helmet, and found that I had enough energy left in me to express in forcible sea terms my opinion of them for constantly jerking at my rope.

Incidents of this kind always teach a lesson of one sort or another. On this occasion I learned that the smoke-cap was of no use, that the only way on board a ship to get at a fire and extinguish it was to use the diver's dress, but that the diving dress was too heavy, and that what we wanted was some modification of it, kept always ready in the event of fire.

To meet the case, I had a light helmet made out of a butter tin and attached to it a short coat with a belt round the waist and bands round the wrists. I tried this in smoke and it was most satisfactory; we adopted it in the *Inconstant*. I have used it in every ship I have

commanded since that date, and have three times experienced its efficacy in saving H.M. ships from destruction. But the Admiralty did not bring it into use until thirty years afterwards, though I am sure it would frequently have proved of the greatest service in all ships of war. The Captain of the *Inconstant* reported on it in a letter as follows:

"H.M.S. *Inconstant*,
"Alexandria.
"26th August, 1882.

"Sir,

"In compliance with your mems. of the 18th inst. directing a report to be made stating whether the Service smoke-cap or respirator of both patterns were tried on board this ship on the occasion of the fire on the 5th of May last, and with what result:

"I have the honour to report that both were tried, with the result that they were found to be of very little use. The men appeared to be able to breathe well enough through the smoke-caps as long as they were standing still, but directly they get excited and begin to take violent exercise, as they are certain to do when the ship is on fire, it appears that they are unable to get sufficient air to keep them from choking. Possibly the medical profession could explain in more elaborate terms the reason for this result.

"Practically it was found during the fire on board the *Inconstant* that the only apparatus by which the fire could be approached was the Service diving dress with air-pipe connected and pump worked on the upper deck, but it was found from the great weight of the helmet and corslet and the cumbrous nature of the dress movements were slow and but little work could be done.

"Gun. Lieut. Percy Scott put on the diving dress himself and descended into the burning compartments and it was in consequence of the experience gained upon this occasion that he devised the ingenious, cheap, and eminently practical modification of the

Service diving dress for use in case of fire, and I venture to think that a few pounds expended in furtherance of Lieut. Percy Scott's views, might in all probability be the means of saving one or perhaps more of H.M. ships from destruction.

"I have the honour to be,
"Sir,
"Your ob. Servt.,
"C. C. P. FITZGERALD,
"Captain.

"Ad. S. B. P. Seymour, G.C.B.,
"Commander-in-Chief."

Their Lordships thanked me for this invention, but added that they did not intend adopting it, as the Loeb (German) smoke-cap appeared to answer the purpose. This is just what it did not do. The smoke helmet and coat was adopted shortly afterwards by the New York Fire Brigade, but it took the Admiralty, as I have said, thirty years to come to a similar decision.

CHAPTER III

WITH THE NAVAL BRIGADE IN EGYPT

Ordered to Alexandria—Naval Brigade Ashore—Collecting Unexploded Shell—Fleet's Deplorable Shooting—Improvisation—Mounting 7-ton Guns—Blowing up a Dam—Queen Victoria and her Troops—Bluejackets and their Medals.

We left the Cape of Good Hope on the 16th May, 1882, to proceed home, calling at St. Helena, St. Vincent, and Gibraltar. At Gibraltar we learned that disturbances had taken place in Egypt, that the whole of the Mediterranean Fleet was anchored off Alexandria, and that there would probably be war. Again our Naval Brigade was prepared for landing, coal and stores were taken in with all dispatch, and we had high hopes that we should be ordered to Alexandria. Four days after our arrival at Gibraltar a signal was made, "*Inconstant* proceed to Alexandria, calling at Malta."

The delay at Gibraltar and further delays at Malta and Cyprus brought us to Alexandria a week too late to share in the bombardment. In spite of that distressing fact, however, there was still plenty of work to do and our brigade was landed and remained on shore until the Battle of Tel-el-Kebir terminated the war.

Arabi Pasha and his forces had already left the town and taken up a strongly entrenched line of defence at Kafr Dowar: while the British Army weakly held a position at Ramleh, a suburb a few miles out of Alexandria. In these circumstances it was still necessary to hold the forts and lines of defence immediately round Alexan-

dria, and part of our men were employed for this purpose.

One detachment, under Lieut. H.S.H. Prince Louis of Battenberg,[1] occupied a position on the left flank, and was quartered in the very much knocked about Khedive's Palace. Another detachment, under Lieut. Bourchier Wrey,[2] went out to the advanced lines at Ramleh; and I, with a detachment, took up quarters at Fort Com-el-Dic.

The fort stood on high ground and commanded a very extensive view. Our duty was to assist in the defence of the lines if they were attacked, and to maintain communication, by heliograph in the daytime and by flashing lamp at night, with the troops who were under Colonel Vandeleur.

I soon found that I was to be a sort of handy Billy, and for anything that had to be done requisition was made on Com-el-Dic. The first thing I was told to do was to collect all the unexploded shell that had missed the forts and fallen into the town during the bombardment. There were many of them, of all sorts and sizes. Some from the *Inflexible's* 16-inch guns weighed 2000 lbs. and were very difficult to handle; to get them out of the houses we used mattresses and featherbeds. Great care was necessary, as the fuses were in the shells and an extra fall might send them off. An attempt to take out the fuse of a shell had been made with fatal results; it exploded and killed every one concerned. In carts well lined with soft material we transferred these shells to a piece of waste ground and buried them. An enormous percentage of our shell failed to explode during the bombardments, the reason being that they were fired with reduced charges, and the construction of the fuse

[1] Now Admiral the Marquess of Milford Haven.
[2] Afterwards Sir Bourchier Wrey, Bart.

was such that it would only operate when a full charge was used.

Our next job was to go round all the forts that had been bombarded, and bury the unexploded shell. Our gunnery during the bombardment had not been very good, and the town appeared to me to have suffered more from the misses than the forts had from the hits. I counted in the various forts forty-two modern heavy guns, varying from 10-inch to 7-inch. Only ten of these had been put out of action by gun-fire during a day's bombardment from eight battleships carrying about eighty guns varying from 16-inch to 7-inch, besides a large number of lighter guns.

The Fleet fired in all 3000 rounds at the forts, and as far as the enemy's guns were concerned made ten hits. One would have thought that this deplorable shooting would have brought home to the Admiralty the necessity of some alteration in our training for shooting, but it did not. They were quite satisfied, inasmuch as it was better than the Egyptian gunners' shooting. It certainly was, for the ships of the Fleet, though at anchor for most of the time, were not damaged to any extent. But to be satisfied with our Fleet beating the Egyptian gunners was not taking a very high standard.

In one fort I found that some very good shooting had been made by 11-inch guns, probably those of the *Temeraire*. All round two of the guns were strewn parts of 11-inch projectiles fired by our ships. One of these guns looked as if it had been struck by a projectile on the top near the trunnions, for the trunnion ring was fractured. The other gun had received an 11-inch projectile on the underside of the embrasure, and the front pivot was destroyed. Apparently the Egyptian gunners paid no attention to this. They fired it again, and from want of

any holding down at the fore end it toppled over backwards.

Bluejackets often say very quaint things, but, without the customary adjectives, some of the terseness of the remarks is lost. When gathering up the unexploded projectiles in the town, we found a gigantic 16-inch shell outside the door of a baker's shop, but no external damage had been done. A sailor gazed at it and remarked to his mate, "I wonder how this —— thing came here; there is no hole anywhere." His mate looked round, and seeing one of the extremely narrow alleys of Alexandria behind him, replied, "I suppose that it must have made this —— street." As a matter of fact, it had come through the roof, and the whole of the interior of the house was wrecked.

On another occasion two bluejackets saw a military officer approaching, wearing a belt with a host of things, such as a knife, field-glasses, water-bottle, cigar-case, torch, etc., suspended from it. Their conversation was as follows: "Bill, who the —— is that?" "Don't you know him? Why, he's the new Colonel." "Oh! new Colonel, is he? Why, he only wants the candles to make him into a regular —— Christmas-tree."

Arabi had mounted at Kafe Dowar a 15-cm. gun,[1] which far outranged anything that we had. As it was giving them an unpleasant time at Ramleh, Sir Archibald Alison signalled to me to come there, and when I arrived asked me if I could manage to get a gun out of one of the forts which would match this gun in range. He thought that a 64-pounder would be heavy enough, but his R.E. and R.A. experts had said that it was impossible, and he wanted it in position at Ramleh in four days.

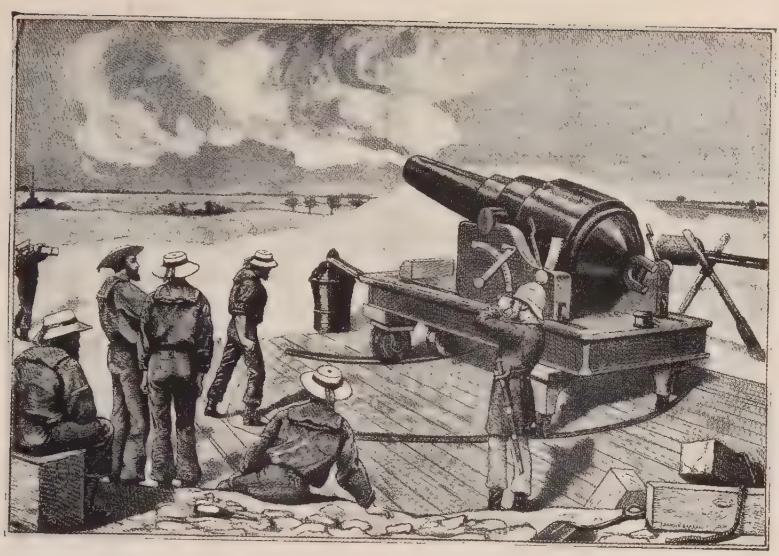
[1] This gun is now at Whale Island, Portsmouth.

I galloped back to Com-el-Dic, turned the company out, and with my two midshipmen, Mark Kerr [1] and Lacy, discussed the matter. I knew that in Fort Pharos there was a large and very serviceable sling waggon, and that Fort Rasaltin had three undamaged 7-in. 7-ton guns, which were just double the size wanted by the General. I sent Mark Kerr off with a party to get the sling waggon, and Lacy with another party to get some tackle, hydraulic jacks, and other stores which we knew were in one of the forts. Meanwhile, I went to have a look at the guns. They were on a high bank overlooking the sea, with a steep incline behind them and a wall at the bottom of it. I sat down opposite one of the guns, and think I must have looked at it for an hour. Seven tons of iron is a good weight to shift, but it had to be done, for I had made up my mind that I would not take out a lighter gun. Suddenly I realised what a fool I was, and how easily the thing could be done, and within the allotted time.

Hurrying back to Com-el-Dic, I made some drawings, requisitioned native labour to pull down the wall during the night, and sent Mark Kerr to arrange for a dozen cartloads of railway sleepers to be at Rasaltin Fort on the following morning at daylight. Late that night I told Sir Archibald Alison, whose quarters were at the railway station just below Com-el-Dic Fort, that I could get, within the prescribed time, a 7-ton gun.

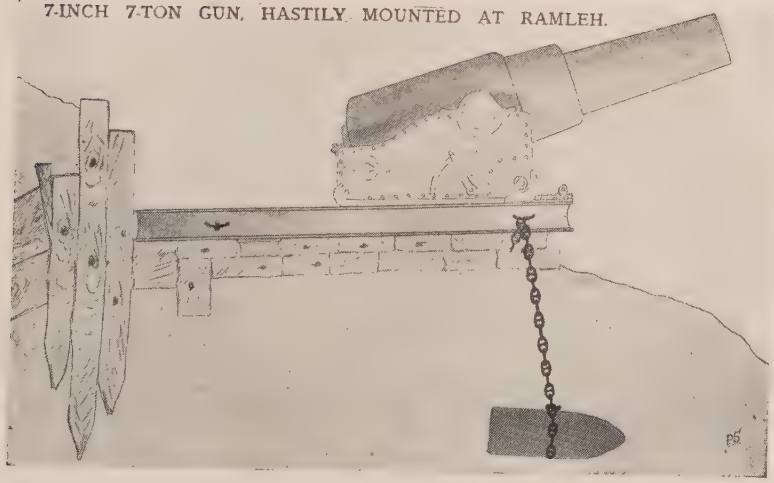
The next morning we dismounted the gun and let it roll down the bank. We then secured it under the sling waggon and took it across the city to the railway station. This occupied all day, as two or three times the road gave way under the weight, and we had to unsling the gun, and with hydraulic jacks get the wheel out of the hole. By the next evening we had the slide, carriage,

[1] Afterwards Vice-Admiral Mark E. F. Kerr.



BOMBARDING ARABI'S LINE

7-INCH 7-TON GUN, HASTILY MOUNTED AT RAMLEH.



7-INCH 7-TON GUN HASTILY MOUNTED AT RAMLEH

[*Page* 64]

and gun at Ramleh, and we mounted it in the following manner. A platform of railway sleepers was put down in the sand and the slide and carriage were placed on it. To prevent the fore-end of the slide jumping on firing, we fixed it down by chains attached to heavy shot buried in the ground. The 7-ton gun had to be detrained about a hundred yards from the mounting and considerably below its level. The problem was how to get this weight up the steep incline of sandy soil. On top of the hill we made a very strong anchor out of railway sleepers, which were let into the ground; attached to this was a block, with a hawser rove through it, one end of which went to the gun and the other to two locomotives on the railway line. Two locomotives steaming ahead and more than 1000 men on the hawser meant some pull, and the gun went up in double time.

Then came the difficulty of getting the 7-ton gun on to its carriage. It required to be vertically lifted about three feet. This we managed to do by making an inclined plane of sleepers covered with grease. Up this we shoved the gun with hydraulic jacks. It took some time and some shoving, but we got it in place.

On the 27th August we opened fire on Arabi's works, and did great damage. The artist of our brigade inscribed on the gun:—

"H.M.S. *Inconstant.*
Lay me true and load me tight
And I'll play the Devil with Arabi's right."

Subsequently Sir Archibald Alison wanted more guns, so we brought up two more 7-ton guns and mounted them on a hill near the waterworks. With more time at our disposal we mounted these more elaborately, burying a gun with its muzzle upwards to form a front pivot. We

made some very good shooting with those weapons, and so did Arabi at us. But his shells were perfectly harmless, for they went deep into the soft sand and on bursting only threw up a column of sand.

Just when the mounting of these guns was finished, it was feared that Arabi might make an advance upon us across the dry portion of Lake Mariotis. It was therefore decided to flood this portion. The scheme was to open the sea end of the ditch round Fort Mex and allow the water to flow through into Mariotis, but it meant making a culvert in the railway embankment and constructing a wall to ensure the water going through the culvert. The Engineers undertook to cut the culvert, and I, with the *Inconstant's* men, was to build the wall and finally to blow up the dam at the sea end.

When the wall was finished, we well planted the dam with gun cotton mines, and took electric leads from them to a point at a safe distance. Admiral Sir William Dowell, K.C.B., came out to do the final blow-up. He pressed the button, and there was a gigantic explosion, followed by a mighty rush of water. In a few days Mariotis would have been flooded, but that very evening we received orders to replace the dam again, as the war was practically over, Tel-el-Kebir having fallen on the 13th September.

On the 16th September, 1882, we returned to the ship, and on the 26th left Alexandria for Portsmouth, where we paid off in October.

Before leaving Alexandria, Sir Evelyn Wood was kind enough to send for me, and read me an extract from his dispatch:—

"20th September, 1882.

"Men under the direction of Lieut. Scott worked in a most praiseworthy manner in mounting three

7-in. guns on the Water Tower position. The sand being very heavy rendered the work most difficult. It is right I should say that Major-Gen. Sir A. Alison had previous to his departure spoken to me of Lieut. Scott's work in the highest terms of praise. The cutting of the Mex Dam was also an arduous piece of work performed by Lieut. Scott and a party of blue-jackets."

From Major-General Sir Archibald Alison, K.C.B.

"Headquarters, 3rd Brigade,
"30th August, 1882, 1 p.m.

"My dear Wood,

"I cannot leave this without sending you a line to bring to your notice the excellent work which Lieutenant Scott, of the *Inconstant,* has rendered to me in bringing up heavy guns under almost insuperable difficulties, in which work he has been employed since the 1st inst. He is one of those men with whom it is a perfect pleasure to act; he never makes difficulties and never finds anything impossible. I cannot too strongly recommend him to your favourable notice. Excuse this line; everything is packed and I have no writing materials at hand. With all good wishes, and hoping soon to see you up with us.

"Ever yours most sincerely,
"(Signed) A. Alison."

Subsequently the Admiralty sent the following communication:—

"*Duke of Wellington,* Portsmouth,
"9th November, 1882.

"Herewith you will receive an extract from a Dispatch of Major Ardagh, C.B., R.E., bearing testimony to the valuable services rendered by Lieutenant Scott, R.N., of H.M.S. *Inconstant,* and the men under his command, at Ramleh.

"2. This testimony to his skill and energy is to be communicated to that officer, and he is to be informed that their Lordships have much pleasure in communicating it to him.

"(Signed) A. P. RYDER,
"Admiral, Commander-in-Chief.

"Captain Fitzgerald, H.M.S. *Inconstant.*"

Extract from Report of Major J. C. Ardagh, C.B., R.E.

"17th October, 1882.

"Lieut. Scott, R.N., was employed under me in arming the Ramleh position with heavy guns belonging to the Egyptians, and got two 7-ton 7-in. rifled guns and a 40-pounder into position. The difficulties attending the transport of guns of this weight over the soft hills of sand were got over in an incredibly short space of time by the skill and efforts of Lieutenant Scott and his bluejackets, and the two heavy guns brought up by the Egyptians to the Kafe Dowar position were held in check until the surrender by the fire of these pieces.

"(Signed) J. C. ARDAGH,
"Major, R.E."

On the return of the troops, after the Egyptian War, Queen Victoria graciously decided to receive a contingent of the officers and men from every ship and regiment that had served in the campaign, and to present them with their medals personally. I was made a sort of I-do-not-know-what of by the men, who were collected from all parts of England. The Admiralty had arranged that they were to be housed for the night at the Norfolk Hotel, close to Paddington Station, and go on to Windsor the next day.

The Admiralty informed me that I was to see the men properly dressed and to explain to them the etiquette of the occasion, which was to the effect that they should, on coming opposite Her Majesty, go down on the right knee, hold out their right hand, receive their medal, then rise, bow and be off.

We practised a few of the men at this ceremonial, but it did not go very well. It was evident that for the bluejacket to perform his part gracefully a lot of practice would be necessary, and bluejackets' Sunday trousers do not lend themselves to bending down on the knee without some risk of splitting. Perhaps fortunately, the etiquette was altered, and late in the afternoon the Admiralty informed me that the officers and men would march by, receive their medal, and walk on.

I explained this alteration of the etiquette to a boatswain's mate, and he conveyed it to the men in the following terms, and in a voice which must have made itself heard throughout the hotel. "Now, do you 'ear there, the etiquette is altered; when you come opposite Her Majesty, you don't go down on the knee, you stand up, take your 'at off, hold your 'and out, and her Majesty puts your medal in the palm. When you get it, don't go examining it to see if it has got the proper name on it, walk on: if it's not the right one, it will be put square afterwards. It's like getting a pair of boots from the ship's steward; if you get the wrong pair, it's rectified afterwards, you don't argue about it at the time."

On the following day we went to Windsor. We were assembled in the centre of a large quadrangle, and when everything was ready Queen Victoria came out and made a short speech. The clearness and carrying power of Her Majesty's voice was perfectly wonderful; we all

heard every word, and the public who were on the other side of the quadrangle could also hear. At the conclusion of the speech we all filed by and received our medals.

CHAPTER IV

H.M.S. *EDINBURGH* AND WHALE ISLAND

H.M.S. *Excellent* again—King George's Gunnery Course—Improvements in Big Gun Targets—Service on H.M.S. *Duke of Edinburgh*—Making Ships look Pretty—Duke of Edinburgh's Interest in Gunnery—Invention of a Signalling Lamp—How the Admiralty treated it—Sinking of H.M.S. *Sultan*—A Unique Salvage Operation—Back to Whale Island—A Prophecy fulfilled—How a Cricket Pitch converted the Admiralty—Convict Labour—A Committee on Naval Uniform—A Naval Barnum—How the Royal Naval Fund was instituted—Farewell to Whale Island.

In 1883 I was appointed to H.M.S. *Cambridge,* the School of Gunnery at Devonport. After serving there six months, I was transferred to H.M.S. *Excellent,* the Senior Gunnery School at Portsmouth. Shortly after I arrived, I was told that my idea of converting Whale Island into a Gunnery School was well-known, and that it was quite impossible; a mud-heap the island had been and a mud-heap it must remain.

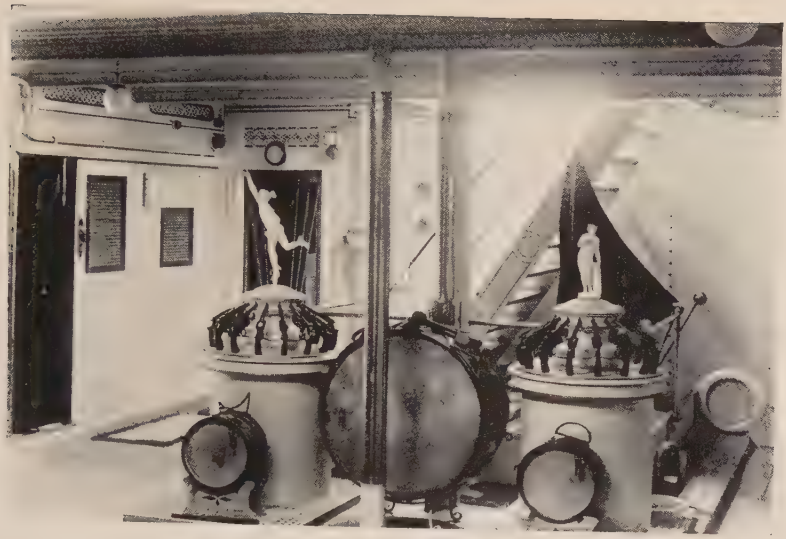
This was not very encouraging, but I made out a plan, showing barrack accommodation, with all the necessary gun batteries and instruction rooms, and laid it before Captain John Fisher (now Admiral of the Fleet Lord Fisher of Kilverstone) who, after going most carefully into every detail, took it to the Admiralty, and not only was the conversion of Whale Island into a Gunnery School accepted, but it was decided to begin the work at once.

In 1885, King George V, as a Sub-Lieutenant, joined the *Excellent,* to qualify in gunnery, and I was appointed as his governor. His Majesty passed most satisfactory

examinations and displayed extraordinary proficiency as a rifle shot.

During the three years (1883 to 1886) that Captain Fisher commanded the *Excellent,* great strides were made in the introduction of breech-loading and machine guns. An experimental staff, which was much wanted, was brought into existence, and the heavy-gun prize firing of the Fleet was changed. Heretofore, ships had used as a target a cask with a flag on it, and points were awarded according to how much over or short some one judged the misses to be. In 1884, Lieutenant Randolf Foote (later on an Admiral), the Senior Lieutenant of the *Excellent,* proposed that a large canvas target should be used, and that only shots actually striking the target should be counted. The firing ship was to steam along a marked-out base line at a known range. This proposal was adopted and remained in force for twenty-one years. In those days of the *Excellent* there was constant friction between the Commander and First Lieutenant. The Commander wanted to employ the men in painting and housemaiding the ship; the First Lieutenant wanted them employed in learning gunnery, the *raison d'être* of the men's presence in the ship.

In 1886 I was promoted to Commander, and shortly afterwards joined H.M.S. *Duke of Edinburgh,* the most modern turret ship of that time. With the co-operation of Lieutenant Peirse, a very smart gunnery officer (afterwards Admiral Sir R. H. Peirse, K.C.B., M.V.O.), I started training the officers and men in hitting the target, using miniature rifles in the bores of the big guns, and introduced many other appliances that are in use to-day. But the innovation was not liked—we were twenty years ahead of the times, and in the end we had to do as others were doing. So we gave up instruction in gunnery, spent money on enamel paint, burnished up every bit of



THE AFT DECK OF H. M. S. "EDINBURGH," SHOWING THE DECORATIONS

HOLYSTONING A DECK

Decks were wetted, then sanded, and bluejackets rubbed them with stones

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steel on board, and soon got the reputation of being a very smart ship. She was certainly very nice in appearance. The nuts of all the bolts on the aft deck were gilded, the magazine keys were electroplated, and statues of Mercury surmounted the revolver racks. In short, nothing was left undone to insure a good inspection.

In those days it was customary for a Commander to spend half his pay, or more, in buying paint to adorn H.M. ships, and it was the only road to promotion. A ship had to look pretty; prettiness was necessary to promotion, and as the Admiralty did not supply sufficient paint or cleaning material for keeping the ship up to the required standard, the officers had to find the money for buying the necessary housemaiding material. The prettiest ship I have ever seen was the *Alexandria*. I was informed that £2000 had been spent by the officers on her decoration.

In these circumstances it was no wonder that the guns were not fired if it could be avoided, for the powder then used had a most deleterious effect on the paintwork, and one Commander who had his whole ship enamelled told me that it cost him £100 to repaint her after target practice. Fortunately, target practice could easily be avoided; Admirals seldom asked any questions about it, as their ships were generally the worst offenders.

The Duke of Edinburgh, who was then Commander-in-Chief of the Mediterranean, was an exception to the general rule, and took a great interest in gunnery; but in the conditions then prevailing—absence of competition, no encouragement from the Admiralty, and the general impression in the Fleet that gunnery was of no importance—it was impossible to improve matters.

As a Commander-in-Chief, the Duke of Edinburgh had, in my humble opinion, no equal. He handled a

Fleet magnificently, and introduced many improvements in signals and manœuvring. At this period, when the Admiral wished to make a signal at night to all the ships, about half a dozen operators had to be employed making the signal in different directions, so that all the ships could see it. Even then it was difficult, as the signalling lamp got mixed up with the other lights in the ship.

It occurred to me that if we could put a light on the top of the mast the ships all round would see it, and that the difficulty of its being confused with other lamps would be removed. Accordingly, I had a lamp made with a screen which we could pull up and down by means of a wire, and so make flashing signals. The Duke of Edinburgh adopted it in his flagship, and many other ships copied it.

This lamp had an interesting career, extending over many years. The authorities saw the utility of it, but did not wish to adopt it—whether or not because it was my invention is a matter on which I will offer no opinion. So they turned it upside down, christened it the "Gravity Lamp," and introduced it for use in the Navy as their own invention.

As soon as it came into general use, this lamp proved a failure, as the shade, by its own weight, would not cut off the light quickly enough, and frequently would not fall at all. By way of obviating the difficulty they put springs on the top of it, but discovered there was insufficient room for them. Finally, after years of trial and waste of money, they were compelled to adopt my original suggestion, and a lamp of this description is still used by the British and other Navies of the world.

The only interesting and instructive event that took place during the *Edinburgh's* commission was the salvage

of H.M.S. *Sultan,* one of our finest ships. She was practically raised by a French engineer with a staff of twelve men, and his method of raising her, novel at the time, is now recognised and used by all salvage companies.

It was on the 6th March, 1889, that H.M.S. *Sultan,* while practising firing torpedoes, struck on a rock in the Comino Channel. Every endeavour to tow her off failed, and seven days afterwards, during a northerly gale, she was washed off the rock and sank in 42 feet of water. An examination of the hull of the vessel by divers, revealed that the damages sustained were so excessive that all hope of getting her up was abandoned. The Admiralty offered £50,000 to any one who would raise her and bring her into Malta Harbour, but the representatives of two or three firms who had a look at her agreed in regarding the task as impossible.

Two months later, a French engineer, named Chambon, who was employed in the Corinth Canal, paid her a visit and, to the surprise of every one, expressed an opinion that she could be raised quite easily. A contract was at once made with the Admiralty by which they were to pay £50,000 if the *Sultan* was in Malta Harbour before the end of the year.

Speculation was rife as to how many men-of-war M. Chambon would require to assist him, and how much plant he would bring. He required no help, and arrived in a tiny steamer called the *Utile,* with a total crew of twelve, six of whom were divers. The only plant he brought was *brains.*

He started his work on the 24th June by cautiously blasting away such rocks as were too close to the ship's side to enable the work to be undertaken on the holes that had been discovered. The task of closing up the larger fractures in the ship's bottom was then begun, and

one by one the holes were sealed up in the following ingenious manner.

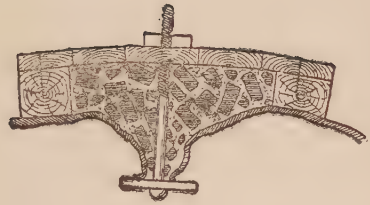
From templates taken by the divers of the curvature of the ships bottom in the vicinity of the hole, a wooden frame was prepared. This was sent down, and the divers secured it round the hole. Across this frame planks were nailed, and as each plank was put in its place, the space between it and the plating was filled in with a mixture of bricks, mortar, and cement, and thus a solid sheathing was formed over the hole.

The excellence of this work can be seen from the pictures on the opposite page; it was a masterpiece of diving skill. Meanwhile the work of making watertight the upper deck, including hatchways, ports, and ventilators, was proceeded with, and the various pumps put on board by the dockyard were got ready for pumping her out.

At the end of a month, on the 27th July, all the holes were sealed up, the pumps were started, and the ship was lifted. Unfortunately a gale of wind sprang up. The *Sultan* sank again, and, in striking the bottom, did more damage to the hull. This disheartening occurrence only strengthened M. Chambon's indomitable energy. Directly the weather moderated, the divers went down, repaired the hull, and on the 17th August the pumps were started and the *Sultan* floated.

Then followed catastrophe number two. While she was being moved, the ship was caught by the current, and knocked up against a rock, displacing a patch. She filled, and sank for the third time.

The reports of the divers as to the extent of the damage done by this third sinking were very discouraging; but nothing would deter M. Chambon from completing his work. Renewed energy was put into it, and, nine days afterwards, on the 26th August, the *Sultan* was up again and towed into Malta Harbour. I was in charge of a



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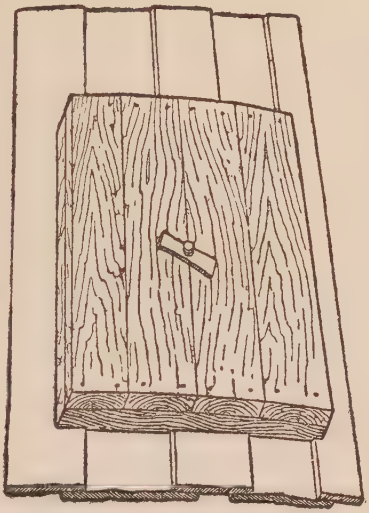

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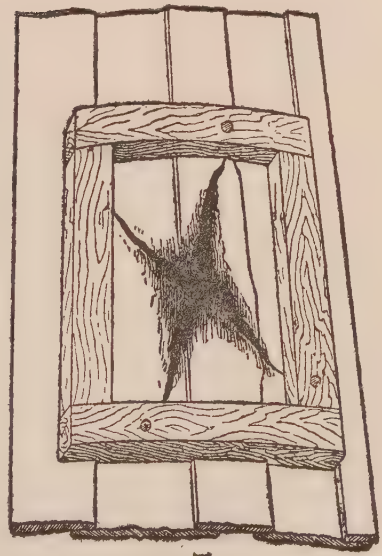


II

large party of men from the *Edinburgh* to assist in docking and clearing her.

The ship must have been splendidly built. After sinking three times and being on the bottom for six months, she showed no signs of structural weakness. As the water was pumped out, we turned the engines and trained the guns, which showed that she was not out of line. In a month or two she steamed home.

At the Fleet Regatta we took the first prize very easily with a boat which had been converted into a model of our own ship. She steamed about and fired her guns in a way that must have been astonishing to the spectators who were not in the secret of her internal economy. The method of her working was this. Six men were employed in turning crank handles, which revolved the screw and sent the vessel ahead at a good speed. The Captain steered her from forward with his head in the pilot tower, and one man was allotted to each turret, training it round and firing the guns, which consisted of rifles in a tube. In the funnel was a small fire to give her the appearance of being under steam. Vessels similar to this one were used three years afterwards at the Royal Naval Exhibition, and twenty-five years afterwards, during the War, I was asked to construct a dummy fleet.

My two years and six months in the *Edinburgh* was a most enjoyable time—quite a yachting trip. We visited all the places of interest in the Mediterranean during the summer and spent most of the winter at Malta. Sometimes we went away for a shooting trip, and had excellent sport. I remember that one day at Patras four guns got three hundred head.

In February, 1890, I was obliged to say good-bye to this most comfortable ship and her charming officers.

The Admiralty had taken the barracks at Whale Island seriously in hand, and I was appointed Commander of H.M.S. *Excellent,* to superintend the bricks and mortar.

I found that my original plan for this island had been much departed from. Instead of the crescent right round the north side, a lot of detached blocks were being built, and placed in such a manner as to make expansion difficult.

Things generally were in rather a confused state. As the *Excellent* would not hold all the men, part of them had been sent to Whale Island and part to a ship in the harbour. This was very unsatisfactory, both for instruction and for discipline, and I persuaded the Captain (Captain Pearson) to transfer every one to Whale Island. Thus was fulfilled the prophecy I had made twelve years before, that Mud Island would become the Gunnery School of the Navy. We said good-bye to the old ship that had served as a Gunnery School for thirty-two years, and as she was eighty-one years old it was time that she went.

The architectural aspect of Whale Island was peculiar. Although many buildings had been erected and many were in process of construction, no attempt had been made to deal with the problem of road-making, levelling and draining. To have suggested such a scheme to the Admiralty would have meant stopping it for ever, so I went to work differently. By sending round a subscription list to the Navy I got enough money to make a thoroughly good cricket pitch in the centre of the island. It was well drained and chalked under, and stood out in wonderful contrast to the quagmire of mud and dirt surrounding it.

Shortly after the completion of this pitch, their

Lordships, the Commissioners of the Admiralty, visited the Island. I took them across to the pitch; they walked to it up to their ankles in mud, and orders were promptly given for the island to be drained and levelled. With the aid of four hundred convicts the work proceeded very rapidly.

As my particular business was to attend to the constructive works in progress at the time, and as most of it was being done by this class of labour, I had a good deal to do with the convicts. Those employed at the island were all men under a long sentence of imprisonment. Some were what the chief warder called "lifers," but the majority of them had committed no great crime, their fate being rather due to their parentage and early environment than to their own actions. They had not committed a burglary or attempted murder—they had not it in them to do so; they were there for an accumulation of thefts, most of them having been brought up to thieve. Their minds were wrong and their constitutions bad, and it was probably only being in prison that saved them from dying. To have put them into a lethal chamber would have been far better for the majority of them, and for the State.

The four hundred convicts working on Whale Island were divided into gangs of twenty-five each, and each gang was supervised by a warder equipped with a sword and a whistle. In addition there were about twelve outlying sentries with rifles.

The convicts worked with spades, shovels, crowbars, heavy hammers, and all sorts of tools with which they could attack a warder, and I asked the principal warder one day why the warders were so seldom attacked, surrounded as they were by men who could fell them at any moment. His reply was to this effect: "Our safety is in their blackguardism. An old convict knows that

it is no use attacking a warder. If he kills him he will be hanged; if he even hurts him he will be severely punished. The 'old 'un' knows what to do. He eggs on the novice to attack a warder and agrees to support him in an attack. The novice, falling into the trap, attacks a warder, whereupon the 'old 'un' downs him with his spade and thereby gets a remission of his sentence. That is the reason why we are so very seldom attacked."

Convicts on the island were employed in every description of work—as builders, carpenters and blacksmiths, in making roads, erecting targets, draining, levelling and railway work. Their work was slow, but wonderfully good, and it was surprising what interest they took in it. The principal warder frequently pointed out to me how much superior his men's work was to that of the contractor.

Among the convicts were several well-educated gentlemen of all professions, the Church not being excepted. There was no lack of ability, and there was even competition between the gangs in carrying out their task; the self-constituted leaders of each gang made the remainder do their work well.

In 1880, during my period of service at Whale Island, the Prince of Wales called the attention of the Admiralty to the state of naval uniform. The officers were practically wearing what they liked, and the regulations had not been revised for many years. A committee was formed consisting of the Duke of Edinburgh, Captain H. Boyes, and myself, and I had to go up to London three days a week to attend these deliberations, to the great interruption of my work as Commander of the *Excellent*. Interminable arguments went on in the Navy as to what uniforms should be done away with and what retained. We took the opinions of an enormous number of offi-

cers, and fads and fancies of all sorts were put before us.

Ultimately a very concise book of regulations was drawn up, with copious illustrations, giving the exact shape and dimensions of every article of a naval officer's uniform. H.R.H. wanted pictures of everything for, as he wisely said, they convey much more than writing. The book has now been in existence for twenty-three years. Very few changes have since been found necessary, and we no longer see naval officers in the various fancy dresses in which they used to appear before the committee's report.

In the following year, although I was very busy in getting the new Gunnery School into order, I was again called upon to act in a "side show."

A certain number of philanthropic gentlemen wished to raise a fund to assist the widows and orphans and other dependent relatives of seamen who had lost their lives in the service of their country. A very strong committee was formed, with the Prince of Wales and the Duke of Edinburgh as patrons, and it was decided to hold a Naval Exhibition in London. It was put on the committee and asked to suggest some novelties that would draw the people. I was to be a sort of "Barnum."

The committee accepted my proposal to bring 150 men up from the *Excellent,* and give a field gun display, such as is seen every year now at the Naval and Military Tournament. My second proposal was to build a lake for the purpose of a mimic naval battle, using vessels of the same description as that I made in H.M.S. *Edinburgh,* as described on page 78.

This proposal met with a lot of opposition, as the lake and surrounding stands were to cost over £2000. The Duke of Edinburgh came to the rescue, however, pointing out that the novelty of a naval fight on the water

was sure to prove attractive, and that with stand accommodation for 500, and two daily performances, the exhibition might reap a profit of more than £100 per day. The scheme was then agreed to.

Lieutenant Lionel Wells, of H.M.S. *Vernon,* greatly assisted me and introduced many new features of naval warfare, including the firing of a Whitehead torpedo. In the end it was found the lake had well paid for itself and had made more money than any other section. The exhibition indeed was a great success, and I believe had a balance of £50,000 after paying all expenses. This money was invested and the interest derived from it is to this day used to afford assistance to widows. The fund is called the Royal Naval Fund, and the patron is H.M. the King.

In 1882 great strides were made in perfecting Whale Island as a barracks, but its efficiency as a School of Gunnery advanced but slowly. For bricks and mortar there was plenty of money, but none was ever forthcoming for providing us with the necessary guns and ammunition for instruction. Consequently the training of the officers and men, for which the establishment existed, was not what it ought to have been, though we did our best with what material we could get. All our firing was carried out at a cask with a flag on it, and the qualification of the men's shooting was assessed on where the misses went. In the Fleet at sea no progress had been made in shooting with heavy guns; the appearance of the ships and the state of their paintwork still remained the prime consideration.

My time as Commander came to an end in January, 1893, when I was promoted to Captain. Three years of my career in the Navy had been spent in striving to make Whale Island efficient in barracks, comfort and discipline. I should add that as all new appliances for naval

warfare came to Whale Island for trial, I was able to keep myself up to date in gunnery matters, and then I was appointed to the Ordnance Committee, on which I served until 1896.

CHAPTER V

H.M.S. *SCYLLA* AND GUNNERY

In the Mediterranean again—Condition of Gunnery and Signalling—Revolutionising Night Signalling—The Admiralty and Inventions—A Source of Discouragement—The Boat that went Adrift—The *Scylla's* Cruise—Improvement in Gunnery—A New Sub-calibre Gun and Target—History of the "Doctor"—Prize Firing—The *Scylla's* Triumph—Half-pay.

On the 28th May, 1896, I was appointed Captain of H.M.S. *Scylla,* a cruiser of 3400 tons, armed with two 6-inch and six 4.7-inch guns, and we left England to join the flag of Admiral Sir Michael Culme Seymour, G.C.B., the Commander-in-Chief of the Mediterranean Fleet.

It was six years since I had left the Mediterranean, and I expected to find great improvements in the routine in gunnery and in signalling. To my surprise everything was just as it had been; no advance had been made in any way, except in the housemaiding of the ships. The state of the paintwork was the one and only idea. To be the cleanest ship in the Fleet was still the objective for every one; nothing else mattered.

The quarter's allowance of ammunition had to be expended somehow, and the custom throughout the Navy was to make a signal, "Spread for target practice—expend a quarter's ammunition, and rejoin my flag at such and such a time." The ships of the Fleet radiated in all directions and got rid of their ammunition as quickly as they could. How the ammunition was expended did not matter. The orders to the ships were to expend a quarter's ammunition, and the important thing was to

get the practice over and rejoin the flagship at the time specified.

At the end of my first year in commission, Admiral Sir John O. Hopkins was appointed to command the Fleet, and I found that he had ideas of fleet manœuvres, gunnery and signalling far in advance of any other Admiral with whom I had served.

Night signalling had very little improved since I was in H.M.S. *Edinburgh,* and though a lamp on the truck had been introduced into the Navy, it was too slow to be of much use. I found that all the signalmen on board H.M.S. *Scylla* except one, the yeoman, G. H. Glover, were quite unreliable in the work of taking in signals at night; and in October I put all the signalmen under instruction. By day they were exercised with a small venetian-blind shutter, which made the shorts and longs of the Morse code, and by night with the truck flashing lamp. The venetian-blind idea was new, so the Admiralty "turned it down." During the War twenty-six years afterwards, in 1917, it was resurrected and found to be very useful; it was also used horizontally for communicating with aeroplanes.

Reading 90 groups of five letters each, a total of 450 letters, was rather a severe exercise. At first we had to make it very slowly, and even then there was a high percentage of mistakes. But after two months' instruction the men were perfect. They could read the 450 letters at almost telegraphic speed, and their superiority over the other ships of the Fleet was so marked that the Commander-in-Chief called upon me to report:

(1) What steps I had taken to instruct the signalmen of H.M.S. *Scylla* in night signalling.

(2) To make any suggestions I could as regards improving the instruction of the signalmen of the Squadron.

(3) What apparatus I had used to bring about such phenomenal results.

I drew up a full report on these points and the Commander-in-Chief ordered the system of instruction to be adopted by the Mediterranean Squadron. The energetic Flag Lieutenant (now Capt. H. G. Sandiman) used to exercise the Fleet every night; competition was introduced and prizes were given for special efficiency. In a very short time the night signalling of the Squadron was completely revolutionised; it was found to be quicker and more reliable than day signalling.

On the 17th September, 1898, the Flag Lieutenant sent in the following report:

"H.M.S. *Ramillies*, Malta,
"17th September, 1898.

"Sir,

"I have the honour to bring to your notice that the present appliances supplied to H.M. Navy for signalling at night are inadequate and unsatisfactory.

"I. *The Truck Lamp.*

"Captain Percy Scott has invented an electric truck flashing lantern which fulfils all requirements. The lantern consists of a lamp surrounded by a series of slats as in a venetian blind; when the operator presses a key these slats turn radially to the light and so expose it; when he releases the key the light is obscured.

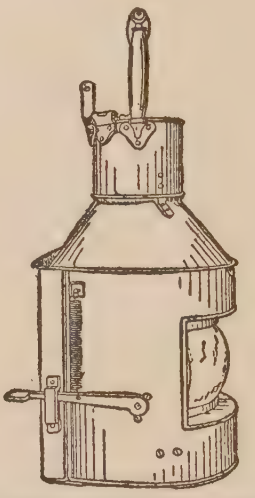
"These lamps have undergone a very severe trial of from eighteen months to two years; they have proved themselves reliable, have been used for general work, and all the night signal exercises; I attribute the high degree of accuracy in night signals which the Squadron has arrived at mainly to the fact of being able to exercise the signalmen with a lamp which makes true Morse at any rate of speed.

"II. *Colomb's Flashing Lamp.*

"This lamp is rarely used in its present form, on account of the following defects in it.

(1) The obscuration is incomplete.
(2) The travel of the shade is too long.
(3) The handle is inconveniently placed and after a time gets too hot to hold.

THE TRUCK FLASHING LAMP.



COLOMB'S MODIFIED FLASHING LAMP.

"Captain Scott has invented a shutter to overcome these defects; it is worked by a suitable side lever, can be easily fitted to the existing lanterns, and answers all requirements.

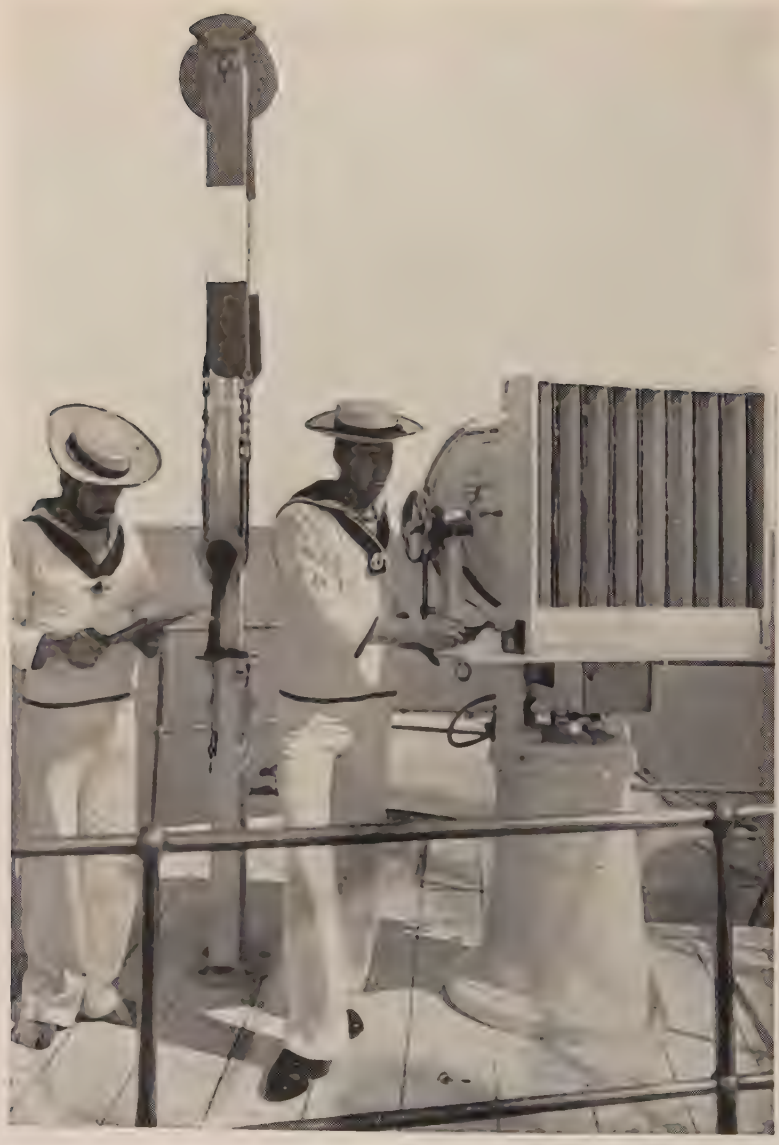
"III. *Flashing Arrangements for Searchlight.*

"The obscuring disc supplied by the Service is a most clumsy and unreliable contrivance. The disc itself shuts off very little light. It frequently carries away owing to excessive heat; the method of working it is irksome, the lever being too high up, on the wrong side of the projector, moving in a wrong direction, with too long a beat.

INSTRUCTIONAL FLASHER MADE ON BOARD H. M. S. "SCYLLA"

It was not appreciated by the Admiralty, but was much used in the War

[*Page* 88]



SEARCHLIGHT FLASHER MADE ON BOARD H. M. S. "SCYLLA"

THE "SCYLLA" PATTERN OF INSTRUCTIONAL FLASHER BROUGHT INTO USE DURING THE WAR

"In fact everything that can be wrong is wrong.

"Captain Scott has invented a shutter[1] which is placed in front of the lens; it is worked by a handle on the right, moving at a short beat and in a suitable direction. It is a pleasure to make Morse with it. Three have been on trial.

"In conclusion I would submit that the following which have been thoroughly tried, be adopted in H.M. Service:

i. Captain Scott's cylinder lamp for use on the truck and at each end of the bridge.

ii. Captain Scott's shutter for existing service lanterns, with alternative fitting for oil or electric light.

iii. A flashing arrangement for searchlight on the same principle as Captain Scott's shutter.[1]

"In view also of what I consider to be the satisfactory state of the signalling of the Squadron here, I submit that the scheme of instruction and instruments which have brought it about may be generally adopted in the Fleet.

"The scheme was submitted to you by Captain Scott early in 1897, and has been in use ever since.

"H. G. SANDIMAN,
"Flag Lieutenant."

Important as the suggestions were it was many years before they were acted on, and during that time the appliance supplied to H.M. Navy for signalling at night remained, in the Flag Lieutenant's phrase, "inadequate and unsatisfactory."

In H.M. Navy an officer is allowed to patent an invention, provided that he submits it to the Admiralty and agrees to comply with some rather drastic official conditions. On the 10th January, 1899, I applied to patent some of the machines I had invented while in H.M.S.

[1] This machine was used by every ship of the Fleet during the War, for signalling both by day or by night.

Scylla. Their Lordships, on the 15th March, 1899, replied that they were pleased to accede to my request, but they added that the fact of my holding a number of patents would, in their Lordships' opinion, constitute a grave objection to my being selected for any scientific or administrative post in H.M. Service.

I discussed this letter with the Commander-in-Chief, Sir John O. Hopkins, who had occupied various positions on the Board of Admiralty and knew their ways. He advised me, in the circumstances, to withdraw my application and not to send the Admiralty any more of my inventions. I withdrew my application, but I am sorry to say I did send the Admiralty some more inventions. They were for a long time boycotted: and the country lost the use of them.

The threat conveyed to me by their Lordships was a distinct infraction of the King's Regulations. Moreover, such an attitude was most harmful to H.M. Navy; for it could only have the effect of discouraging officers from thinking out and devising mechanism for improving the efficiency of the Fleet. The faculty of inventing or devising is a valuable asset to the country, a fact fully demonstrated by the Great War. Where, for example, should we have been without the officers who conceived the idea of Q ships and many other ingenious devices for destroying submarines?

The action of their Lordships, which practically precluded me from patenting any of my inventions, was freely discussed in the Fleet and much criticised. The view taken was that, if the holding of patents were prejudicial to an officer's career, then officers could not patent anything, and they became, in fact, debarred from exercising a right which is otherwise common to all.

An officer, who was a real mechanical genius, came to me for advice with regard to an exceedingly clever

device he had invented for improving the efficiency of the Whitehead torpedo. He pointed out to me that he knew it would be boycotted if he submitted it officially, as that had been the fate of most of his suggestions. Finally, he decided to sell it to the Whitehead factory, and that company having adopted it, brought it into use at once, and H.M. Navy benefited by its introduction! Such are the results of blind officialism!

In 1897, at night, during a gale of wind the flagship had a boat washed away, and there was evidence of its having been much damaged before it got adrift. Wood does not sink, and the remains, after travelling some hundreds of miles, turned up finally at Ajaccio in Corsica. Rather a fuss was made about the incident, as the discovery in the wrecked boat of a bluejacket's cap with with the ribbon of H.M.S. *Ramillies* started a rumour that an attempt had been made to spy on the French fortress. The Commander-in-Chief sent me to explain matters and to bring back the remains of the boat. The explanation was quite satisfactory and the French gave me a most charming welcome.

The acting English Consul drove me round and showed me all the places of interest in the town, and we visited the house where the great Napoleon was born. At the top of the street in which this house stands is a statue of the five sons of Madame Napoleon, all kings, erected, as the date inscribed on it shows, sixty years after her death. Why, one wonders, did they not put it up during her lifetime? No other woman has ever been the mother of five sons all of whom became kings.

On our return voyage to Malta, my First Lieutenant, a very able officer, named Pennant Lloyd, pointed out to me that the recovered boat could be very easily repaired by our carpenter, and that we badly wanted a boat for rough work. After this conversation I was not sur-

prised to find that the boat on the following morning presented a much worse appearance than when we found her. On arrival at Malta a sort of Coroner's inquest took place, the president being an officer who afterwards became head of the London Fire Brigade. My First Lieutenant argued strongly that the boat was of no use except for firewood, and eventually the Board took that view and she was condemned to be broken up. Instead of breaking her up, however, we patched her up, and she did very useful work for a long time.

Gunnery was a difficult problem to attack. There were no efficient targets, the gun sights were bad, and the expenditure of ammunition had to be carried out at stated times and under conditions that afforded little scope for instruction. Our sub-calibre gun was inaccurate and of very little use for instructing the men. However truly a man might lay his gun with it, the shot would not necessarily hit the mark.

In such circumstances it was very difficult to make any progress in rapid hitting. In 1897 and 1898 we complied with the general rules as to drill and the expenditure of the quarterly allowance of ammunition, and we carried out our prize firings with very poor results.

In 1898 I was ordered to go for a cruise to Crete and various places, and as the order meant that I should be away from the Fleet for some time, the Commander-in-Chief, Sir John Hopkins, gave me permission to carry out any changes in gunnery which I considered might improve the shooting of the *Scylla*.

In Chapter II I mentioned the three difficulties that the firer had to contend with. No. 3 had disappeared, as a lateral correction had been added to all gun sights. I therefore had to overcome only the optical difficulty, and the necessity of waiting for the ship to roll the alignment on. Using a telescope as a gun sight would re-

move the optical difficulties. It would give the firer only one point to align on the target instead of two; he would be able to see the target more distinctly, and he could adjust the focus of the telescope to meet any imperfection of his eye.

To alter the existing gun sight was not difficult. We simply pivoted a bar carrying a telescope on the fore sight and allowed it to rest on the rear sight. We experimented with this, using the one-inch Admiralty pattern sub-calibre gun, and obtained very bad results, which the men attributed to the telescope. This threw me back a great deal, as it was difficult to convince them that the fault rested with the sub-calibre gun and not with the sight.

Opposite to Candia in Crete was an uninhabited island which we made use of for many purposes. I took the sub-calibre gun there, mounted it on a rigid platform, and fired at a target. The elevation being the same for every round, all the shots should have gone in approximately the same spot, instead of which they went all over the place. This demonstration proved to the men that their erratic shooting was due to the gun and not to the telescope sight, and thus restored confidence in the gun sight. The one-inch sub-calibre gun supplied by the Admiralty for instructional purposes only we condemned as worse than useless. It was relegated to the storeroom and never appeared again.

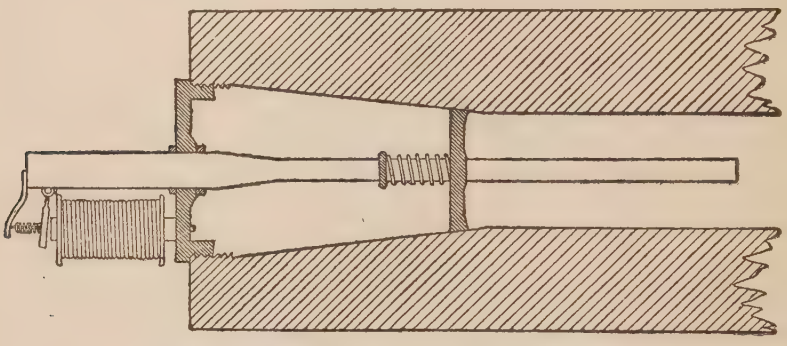
Something had to be made to take its place. The conditions which I wanted the new sub-calibre gun to fulfil were—

(1) It should shoot straight.

(2) The same trigger that fired the gun should fire the sub-calibre.

(3) It should be capable of loading and firing with great rapidity.

To meet these requirements I had a disc made to fit into the breach of the gun. In the centre of it was fixed a rifle, the fore end of the barrel having a cone-piece on it fitting into the bore of the gun. An armature was attached to the rifle trigger and an electro-magnet placed opposite to it, the wires therefrom being taken to the trigger of the gun.



LEE-METFORD AIMING RIFLE IN THE GUN.

We thus had an accurately shooting rifle rigidly fixed in the bore of the gun, and capable of being fired by the ordinary gun mechanism. It was brought into use for instructional purposes on board the *Scylla,* and proved to be a great success. Photographs and drawings of this sub-calibre rifle were sent to the Admiralty in 1898, but they declined to adopt it. Had they done so the Navy would have had an efficient instructional weapon and the country would have been saved £40,000 a year in ammunition, the relative prices of the cartridges of the one-inch and the Lee-Metford being, one-inch, £110 per 1000, and Lee-Metford, £4 per 1000. This rifle was generally adopted in the Navy seven years afterwards. This delay caused a waste of the country's money to the extent of half a million sterling, and very much retarded

our progress in gunnery. Readers with technical knowledge will ask why, if better results were obtained from ammunition costing £4 per 1000 than from ammunition costing £110 per 1000, was the suggestion not adopted? The answer is, that in Government offices they do not like suggestions coming from outside which could have originated in the office itself. It was the same with all my proposals. They were all boycotted, because the people—mostly my juniors in age, and with far less experience—dealt with these matters at the Admiralty, and felt aggrieved that the suggestions had not emanated from themselves.

The accuracy obtained with this rifle in combination with the telescope sight was marvellous, but a difficulty cropped up. According to the Admiralty drill the man who pointed the gun was to adjust his sight; that is, raise or lower it according to where his shot went. But when using a telescope the man had one eye at the telescope and the other one shut, so he could not possibly adjust the sight. To meet this difficulty I increased the gun's crew by one man, whose duty was to raise or lower the sight according to the orders of the pointer. He was called the "sight-setter." The Admiralty hauled me over the coals for the innovation, but four years afterwards a sight-setter was allowed to every gun in the Navy.

Our next trouble was that we had no towing target —the Admiralty did not supply one. What was required was a target that could be towed rapidly past the ship, so as to exercise the men in following it, and teach them to adjust their gun sights in accordance with the speed of their own ship and the speed of the target. Accordingly I had a box made about 12 feet long and 9 inches in section. It was filled with cork so as not to sink when struck with bullets, it carried a flag, and a keel was added

underneath to keep the flag-staff vertical. It would tow at very high speed, and answered our purpose in every way, and we practised at it whenever we could get an opportunity.[1]

The next problem to solve was the provision of a target at which to fire Service ammunition. The target supplied by the Admiralty for the purpose was of no use. It consisted of a triangular base with a mast at each angle, and was canvassed all round.

If you hit it the canvas behind made the hole invisible, and it was no use trying to teach the men to shoot if they could not see whether they were hitting or not. So I made a new target,[2] consisting simply of boards separated by iron rods, two masts and a sail 6 feet by 6 feet. When this target was hit the hole made by the shot could easily be seen.

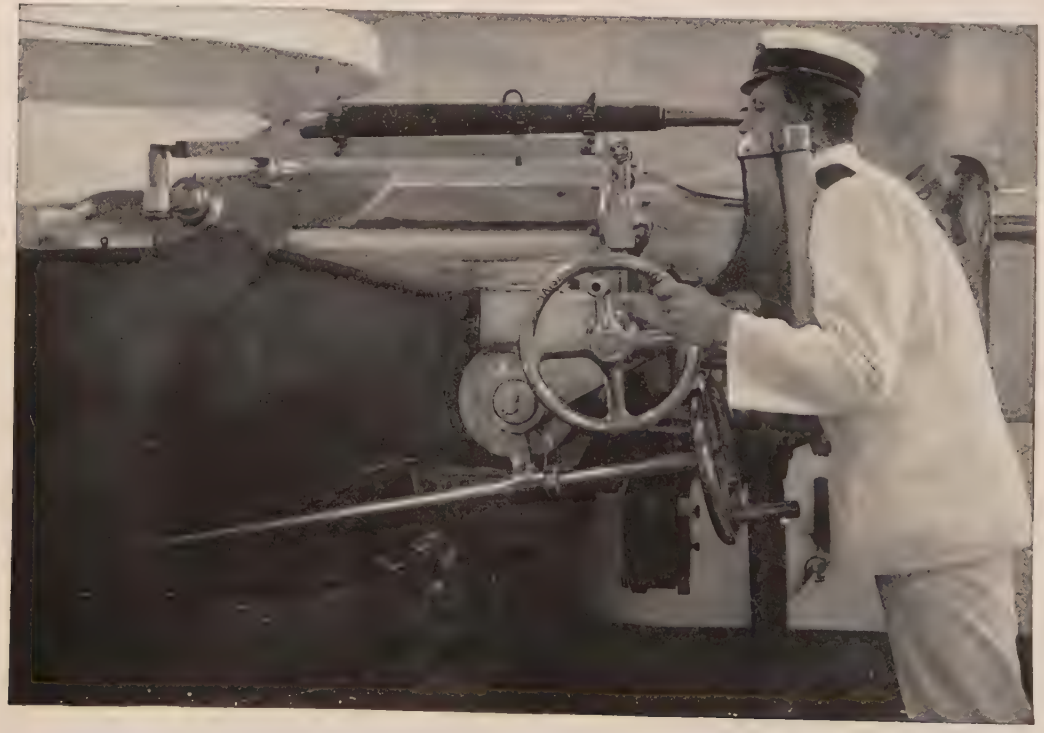
With our telescope sight and efficient sub-calibre gun, we fired thousands of rounds, and the accuracy of aim went ahead by leaps and bounds. One day, when there was a considerable swell and the ship was rolling, we carried out some practice, and the results were shocking. The firing was very slow and, with the exception of one man, no one put his shot anywhere near the target.

I watched this one man very carefully during his firing, and saw that he could work his elevating wheel with such dexterity and speed as to keep his sight steady on the target notwithstanding the rolling of the ship.

What one man could do intuitively the others could be taught to do, but inasmuch as the ship did not always roll, the difficulty was to find out how to teach them. For some days I was at a loss how to solve this final problem. It was a serious one, for had we met an enemy

[1] Though much required in the Navy, the Admiralty would not adopt it.

[2] The Admiralty would not adopt it for six years. Then it came into general use and is in use to this day.



H. M. S. "SCYLLA'S" EXTEMPORISED TELESCOPE SIGHT

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THE "DOTTER"

[*Page* 97]

in a seaway our shooting would have been shockingly bad. One man had demonstrated that in him, whatever the cause might be (he had just had seven days cells), there existed a union between his eye looking through the telescope and his hand on the elevating wheel which enabled him to work that wheel in the right direction and at exactly the correct speed to compensate for the roll of the ship. How to make the other men like him? Fortunately it occurred to me that I could design a contrivance with a target moving up and down at about the same rate as a ship rolls, and compel the pointer to manipulate his elevating wheel quick enough to follow it. This contrivance was made, and the men christened it the "Dotter."

A description of the arrangement may be of interest. On a vertical board, opposite to the muzzle of the gun, was a metal frame which, by means of rollers and a handle, could be moved up and down at either a slow or a fast rate. On this frame was painted a bull's-eye, and beside it was a card with a line drawn upon it. On the face of the board, and moved either up or down by the muzzle of the gun, was a carrier containing a pencil. When the men under instruction pressed the trigger of the gun the pencil, actuated by an electrical contrivance, made a dot on the card, and the pencil at the same time moved a space to the right. If the gun was truly pointed at the bull's-eye at the moment of firing, the dot would be in line with the bull's-eye. If the gun was not truly pointed, the amount of error was indicated on the card.

At this machine the men were given constant practice, and in a very short time they were able to follow the target up and down with remarkable accuracy. In other words they had all learned to do what the one man had done intuitively.

The next time we went out firing there was a considerable roll, but it made no difference to the men, whose shooting was admirable, a fact which I attribute entirely to their course of instruction at the "Dotter." We had got rid of the second difficulty which I have referred to on page 92.

On the 2nd September, 1898, I wrote to Sir John Hopkins, thanking him for the great assistance he had given me in my endeavours to improve the gunnery of H.M.S. *Scylla,* and I pointed out that in our recent practices our shooting, owing to the "Dotter," had so improved that at the next prize firing I anticipated making seventy or eighty per cent. of hits.

On the 26th May, 1899, we carried out our prize firing. At that time independent umpires were not considered necessary, but I took out three with me, Captain R. B. Farquhar, of H.M.S. *Nymphe,* and two lieutenants from H.M.S. *Illustrious.* The six 4.7 guns fired seventy rounds and made fifty-six hits, which was exactly eighty per cent., and placed the little cruiser *Scylla* at the top of the Navy in heavy-gun shooting, and made a record that had never been approached before. H.M.S. *Scylla* also won the Mediterranean Challenge Cup for rifle shooting.

It was strange that although every station encouraged rifle shooting and had a challenge cup for the best ship, on no station was a cup or reward of any sort offered for the ship making the most hits in heavy-gun shooting. Sir John Hopkins, in December, 1888, offered to present a cup, and I drew out a scale of points and regulations for the competition. But he met with too much opposition from the senior officers in the Fleet to carry it through, and, unfortunately for the Navy, his time as Commander-in-Chief was nearly expiring. Had he remained a little longer on the station, I feel sure that

we should have seen introduced under his command all the improvements in gunnery for which we had to wait six long years.

On my return to England in June, 1899, I explained and submitted drawings to the Admiralty of the "Dotter," and it went through the ordinary Admiralty procedure. As in the case of my flashing lamp, they tried to improve on it. On the 15th January, 1901, their Lordships wrote to the Commander-in-Chief China Station: "Trials are being carried out with an improved pattern of Captain Scott's apparatus with a view of its introduction and supply to the Service." In December, 1902, I saw the official pattern. All the "improved" dotters had to be altered at great expense, and we had lost three years of instruction with the apparatus. Fifteen years after this the Admiralty did the same thing in wartime with the depth charge. An efficient pattern was submitted to them, but a year was lost of its use because they wanted to improve on it.

After paying off H.M.S. *Scylla* I was for a few months on half-pay. What a shocking injustice is half-pay to the officers of the Navy! For instance, a captain, fifty years old, after thirty-five years of service in the Navy, with probably a wife and family, received £4 7*s.* 6*d.* a week, less income tax—not the wage of a decent mechanic or hard-working miner.[1]

[1] In July, 1919, this old injustice was at last remedied.

CHAPTER VI

HOW THE 4.7-INCH GUN REACHED LADYSMITH

In Command of H.M.S. *Terrible*—State of the Ship's Gunnery—Useless Appliances—Making Good Defects—Arrival at the Cape—The South African War—Deficiency in Long-Range Guns—Mounting Naval Guns for Service Ashore—Why the 4.7 Guns were sent to Ladysmith—Admiral Sir Robert Harris's Statements—A Recital of the Facts—How the Mountings were turned out—The Value of the 12-pounders—I am appointed Military Commandant of Durban—Prince Christian Victor of Schleswig-Holstein—A Keen Soldier—Assistance in the Defence of Durban—General Buller's Visit—The Man-hauled 4.7—An Effective Object Lesson—Communication with Ladysmith—Mounting the *Terrible's* Searchlight Ashore—Successful Signalling.

After a few months' leave I was sent for by Mr. Goschen, the First Lord of the Admiralty, and informed that I should be appointed to H.M.S. *Terrible* and proceed, *via* the Suez Canal, to China, where I should meet H.M.S. *Powerful*, a sister ship, which we were to relieve. The *Terrible* was what was known as a protected cruiser and the largest of her type in the Navy, displacing 14,440 tons. She had attained a speed of 22.41 knots on a four hours' trial, which was regarded as a wonderful achievement. The *Terrible* mounted two 9.2-inch and twelve 6-inch guns.[1]

I did not much like the appointment, as I felt sure that we should have war in South Africa, and I hoped to get there somehow or other. The First Lord declined to let me go out *via* the Cape, as all the arrangements for both ships coaling at Port Said had been made.

During the ensuing days, our relations with the Transvaal Republic became still more strained, and I

[1] Later on—in 1903—four more 6-inch guns were added.

made another application to go out *via* the Cape, only to meet with a second refusal. It annoyed me, as it seemed such a reasonable thing for the two ships to be heading for the part of the world where war seemed so probable—the *Powerful* having already been ordered to the Cape—instead of going in the opposite direction. At the last moment something happened, and the next day, the 18th September, 1899, I received a telegram to proceed to China *via* the Cape of Good Hope. We lost no time, and left on the 19th, calling at Las Palmas and St. Helena for coal.

St. Helena was in a very bad way. Few ships had called there, and, without any industry, the island had no money. But my experience of St. Helena is that when things are in a bad way, something always turns up. I wondered what the saving event would be this time. Six months later the island was a very busy spot, with four thousand Boer prisoners to feed and look after.

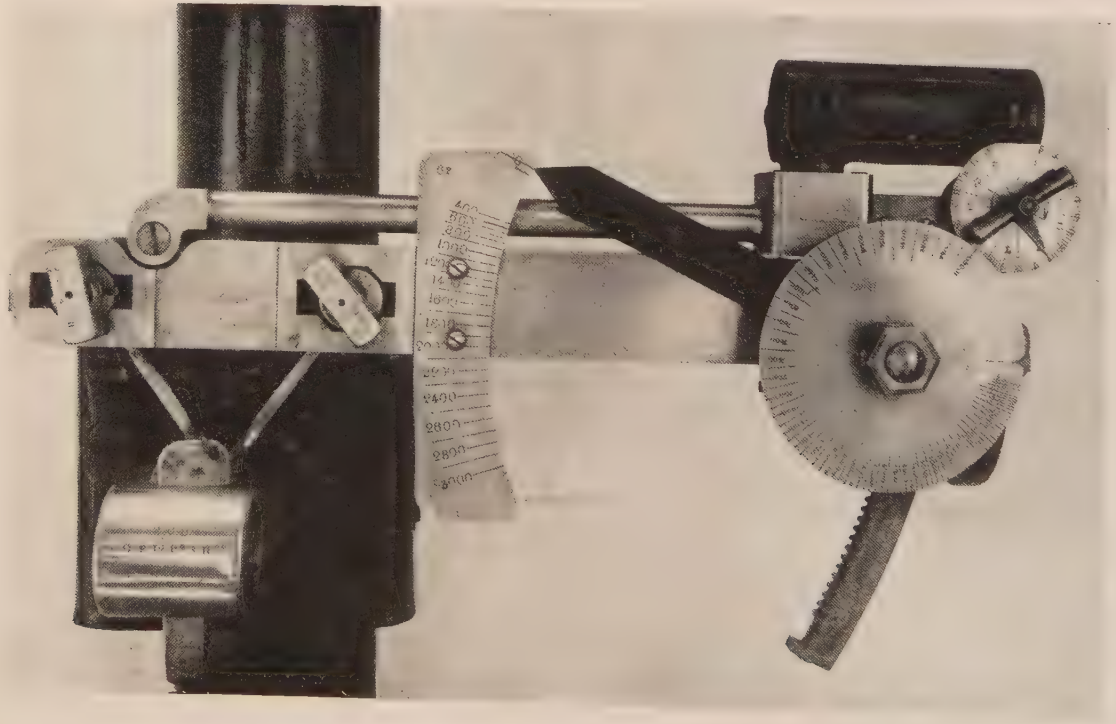
I found the ship's company of the *Terrible* lamentably ignorant as regards gunnery, but very keen on learning, and very anxious to equal the *Scylla's* score, though they were rather dubious as to whether it had ever really been made. Eighty per cent. of hits looked so impossible to them in those days.

No instructional apparatus was supplied by the Admiralty, but I took some out with me, and during the passage both officers and men were kept busy in acquiring a knowledge of shooting, with all descriptions of weapons from the revolver to the 9.2-inch gun.

At this time, when no interest was taken in ships hitting the target or not, the appliances for laying the guns were deplorably bad. The guns themselves were good, and the authorities seemed to think that the matter ended there, and that the gun sight, which is the all-important element in hitting, was of no consequence.

From the fighting point of view, I made an inspection of H.M.S. *Terrible* on leaving England, and found that the gun sights of the 9.2-inch guns were wrongly constructed and unserviceable; that the gun sights of the 6-inch guns were unserviceable, as they could not be adjusted with sufficient accuracy; and that as for the bow guns put in for firing when chasing an enemy, the object of pursuit would be invisible through the sight, as the port was not large enough, and the guns could not be loaded for want of room to open the breach. These defects applied not to H.M.S. *Terrible* alone, but to every ship.

If we met an enemy I wanted to have a chance, so the only thing to do was to alter these ridiculous contrivances supplied by the Admiralty as best we could. The low-power telescopes we replaced by others of high power, and we made the cross-wires by making free with the head of a midshipman who had marvellously fine hair. In order to be able to set the sight accurately for the range, I put on a long pointer which gave a very open reading, and made a new deflection arrangement so that it could be adjusted by a sight-setter. A very good sight was the result and many ships copied it. At the bow guns I put up a looking-glass, which enabled the layer to see through the other side of the port. The 9.2-inch gun sights were so bad that we could do little with them. However, we managed to get them accurate for our ordinary target-practice range. Such defects as those enumerated arose from the fact that gun sights were never properly tested; at the gunnery trials of the ship no aimed rounds were fired. In fact, very often the gun sights were not on board the ship. If the guns went off, the authorities were satisfied; whether they could hit anything or not was regarded as a matter of no importance.



6-INCH GUN SIGHT AS ALTERED IN H. M. S. "TERRIBLE"

4·7-INCH GUN ON PLATFORM MOUNTING AS USED AT LADYSMITH

On the 14th October, 1899, we arrived at the Cape and learnt that the Boers had crossed our frontier two days before. This meant war, and attention had to be turned from preparing for a sea fight to seeing what we could do to assist the Army.

The Boers had no navy, and it was quite impossible for any Power to send a fleet out to attack us at the Cape. Hence the ship's guns were available if they were required by the Army. I was surprised to find that the Navy had made no provision for mounting heavy guns to cope with the superior artillery of the Boers. The omission was contrary to tradition, as the Navy has always helped the Army with big guns.

Our Army had no long-range weapons, and on board the ship the only guns fitted on wheels for shore work were short 12-pounders, which were no better than the Army guns. Curiously enough, these guns, specially supplied by the Admiralty for land service work, were the only guns which the *Terrible* did not use for land service.

After being twenty-four hours at the Cape, I realised the seriousness of the situation. We had insufficient troops to resist the Boer invasion; our base was 6000 miles from the scene of operations, and we had no artillery to cope with the enemy's, either in power or in range. It was the experience of the Crimea and the Indian Mutiny and Egypt over again.

We had on board long-range 12-pounder guns, specially supplied for use against torpedo boats. They were superior in range to any field artillery that either we or the Boers had in the field. It occurred to me that there would be no difficulty in mounting these guns on wheels for service on shore. I purchased a pair of Cape waggon wheels and an axle-tree, and make a sketch embodying my rough ideas.

Mr. Johns, our excellent carpenter, remained up all night with some of his shipwrights and blacksmiths hard at work, and in twenty-four hours we had this little gun ready. To make sure that everything was right, we fired a few rounds, and the mounting behaved very well.

In a week we could have placed in the field fifty of these guns, and, hitched up to the tail of a Cape waggon which would serve as a limber for the ammunition, I anticipated that they could go anywhere, as was to be demonstrated later.

The mounting looked rather amateurish, and I had great difficulty in convincing the authorities that it was not a toy, and a still greater difficulty in persuading them that long-range guns must be met with long-range guns. In the face of much obstruction I hammered away, and by the 25th October four were ready, and as it turned out they were badly wanted, for by that date Mafeking and Kimberley were invested, and Sir George White had retreated to Ladysmith and was threatened with investment.

Much has been said and written about the two 4.7-inch naval guns that assisted in the defence of Ladysmith. Replying for the Navy at a Mayoral banquet, Admiral Sir R. Harris, who was Commander-in-Chief at the Cape of Good Hope Station at the time, was reported by a newspaper to have said:

> "On the 25th October at 4.30 p.m., to be precise, a telegram came from Sir Walter Hely-Hutchinson, the Governor of Natal, saying that General Sir George White in Ladysmith found his guns out-ranged by the Boer guns, and he asked for naval guns. He (Admiral Harris) telegraphed to the officer commanding the line of communications, asking if he had mountings for naval guns. The reply came that he had not. Captain Lambton was dining with him. Captain

Percy Scott was lying outside in the *Terrible*. He signalled to Captain Scott to see what he could do. Captain Scott replied: 'Give me until 8 o'clock.' Admiral Harris replied: 'All right, I will.' And the next day Captain Scott came along with his design for the mountings of the gun."

In his book entitled "From Naval Cadet to Admiral" (1913), Admiral Sir Robert Harris makes the following reference to the guns:

"On October 25th, at 1.30 p.m., the Governor of Natal telegraphed to me—'Following from Sir George White October 24: "In view of heavy guns being brought by General Joubert from the north, I would suggest that Navy be consulted with the view of their sending here detachments of bluejackets with guns firing heavy projectiles at long ranges."' Very fully realising the urgency of Sir George White's position, I informed the G.O.C., Capetown that I would supply two 4.7-inch guns, and asked him if he could supply shore mountings for them. This latter question I put because I knew that there were two 4.7-inch guns mounted on the Capetown defences. On his at once answering in the negative, and the matter being too pressing for any argument, I asked the Gunnery Lieutenant of my flagship if he could design or plan shore mountings for these guns without any delay. He replied that he could not. I then at once signalled for Captain Percy Scott of the *Terrible* to come to me, and explained to him that I wanted temporary designs to mount two 4.7-inch guns on shore immediately, or at any rate by 8 a.m. to-morrow. Captain Scott promptly replied—'I will have them ready by that time.' And he did so."

These two accounts are misleading. I was not sent for, and, although the urgent telegram arrived at 4 p.m., I never heard anything of it until 9 p.m., and then only by pure accident. Had I known of the telegram earlier,

Captain Lambton could have had four guns instead of two, and I could have tested the mountings, demonstrating that there was no need to concrete them down.

Let me now relate what actually took place.

On the 25th October, 1899, I read in a Cape evening paper that the powerful electric lights of Kimberley could be seen from where our troops were. It was obvious, therefore, that we could establish communication by a flashing searchlight. I made out a design for mounting a searchlight on a railway truck, and signalled to the Admiral to ask him if I could come and see him after dinner with reference to it. He replied, "Yes." I little thought that this visit to the Admiral, which was prompted by what I read in an evening paper, would result in getting two 4.7-inch guns into Ladysmith in the nick of time, and that, had I not read that local paper, Ladysmith would have had no artillery to keep the Boer siege guns at such a distance that they were unable to make accurate firing.

At 9 p.m. my drawings of the searchlight on a truck being complete, I visited the Admiral, explained the idea, and obtained his sanction to proceeding with it.

The Admiral then informed me that he had received an urgent telegram from Sir George White in Ladysmith asking if it were possible for the Navy to send him some long-range 4.7-inch guns, but that, having consulted his experts, he found it was impossible to get mountings for them. He had, therefore, decided to send the *Powerful,* commanded by Captain the Hon. Hedworth Lambton, at 5 o'clock on the following day, with the four long-range 12-pounders which had been mounted by me and were ready.

I pointed out that I could see no reason why Sir George White should not have the guns he asked for. There was no more difficulty in making a mounting for

a 4.7-inch gun than for a 12-pounder; in fact, it was easier. To the Admiral's question whether I could have two ready by 5 p.m. on the following day, I replied that I could, if the Dockyard gave me every assistance. This being agreed to, I returned to my ship and made out a pencil drawing of the arrangement, which was very simple.

I ordered an ink copy of the drawing to be made for the Dockyard to work by. The task was entrusted to an engineer lieutenant, the copy to be ready by six o'clock in the morning. Owing to some misinterpretation of my instructions, the drawing had not been commenced when I called for it in the morning. My pencil sketch was, however, quite good enough for the purpose, and I mention this incident only because it was stated in the Press that, although I conceived the idea of the mounting, the details were worked out by an engineer. I was further considered ungenerous for not mentioning in my dispatches the assistance given me by this officer, and a question was subsequently asked in Parliament.[1]

In preparing the design I wished it to meet the following requirements:—

I. The guns must be able to turn on the platform, and fire in any direction.

II. The platform must be sufficiently stable not to require concreting down.

III. The arrangement must be such that if the gun was not required in one position, it could be quickly transferred to another.

[1] House of Commons, 20th Oct., 1902.—Sir William Allan asked the First Lord of the Admiralty if he would state who designed the gun carriage for the guns used in Ladysmith.

Reply: The gun carriages for the guns used at Ladysmith were designed by Captain Percy Scott, and were constructed under his immediate supervision.

Sir William Allan: May I ask the right hon. gentleman if he is aware that the gun carriage was designed by Assistant-Engineer Roscrudge, and not by Captain Percy Scott?

The First Lord: I am quite clear that the facts are as I have stated them.

The first requirement I met by putting the baulks in the form of a cross, which gave almost equal stability all round, the second by using baulks 12 feet long, and the third by leaving the nuts of the bolts on the top, so that the pedestal could be quickly unscrewed.

The Dockyard worked well, and by 4 p.m. both mountings were ready. Some "know-alls" were quite certain that the platforms would require concreting down. I was certain they would not, but as I had not time to demonstrate this I took the precaution of sending with the mountings sixteen old 12-inch 600-lb. shot, and some chain, with which to anchor down, if necessary, the ends of the timbers.[1]

The *Powerful* left at 5 p.m. under full speed for Durban, where the guns were entrained for Ladysmith. Immediately on arrival the 12-pounders were brought into action. They opened fire at 7000 yards on the Boer artillery, and kept it in check while Sir George White was withdrawing his own guns into the town.

In this initial action, the Gunnery Lieutenant of the *Powerful,* to whom I had given the instructions for mounting the 4.7-inch guns, was unfortunately killed, and the mounting of the guns fell into the hands of some one else, who unfortunately concreted them in, thereby destroying their mobility. This mistake may have been due to the following telegram sent by Admiral Sir Robert Harris: "I am sending in *Powerful,* due at Durban on the 29th, two 4.7-inch guns, on extemporised mountings. Efficient SOLID PLATFORM accommodation should be ready for them."

The day after the *Powerful* left we had another

[1] Nine years afterwards I visited Ladysmith, and the Mayor told me that no one had ever been able to solve the mystery of how these 12-inch shot got to Ladysmith.

mounting ready, and for the benefit of the wiseacres who had doubted its stability and thought a solid platform necessary, I fired the gun without sinking the platform into the earth at all, with the result that the platform did no more than jump slightly. To test how long it took to dismantle the mounting and take it to another position, we fired a round in one position and in half an hour had the gun ready for firing in another position 100 yards away, thus demonstrating that the mounting fulfilled the conditions of mobility. A great number of these mountings were used during the late war.

These platform mountings were the best I could do in the ten hours given me by Admiral Sir Robert Harris, but as our Army had no heavy guns at all, it was necessary to extemporise quickly a more mobile mounting which would move with troops in the field.

It was no good preparing an elaborate design. I had to investigate the resources of the Dockyard, and see what could be made quickly. In the blacksmiths' shop I found some 4-inch square bar iron. This settled the design, which I drew on the door in chalk. The 4-inch bar was to be heated and a hole worked in it of sufficient diameter to receive the coned pedestal of a 4.7-inch gun mounting, the ends being then drawn down and turned for the wheels. In a minute the blacksmith was under way making it. I then went over to the plate shop, and found a circular piece of $\frac{5}{8}$-inch plate about 4 feet in diameter, with a hole in the middle of it. This was the very thing. Two pieces of angle-iron worked round the edge of it to carry a broad tyre, a brass box as a nave with a few pieces of angle-iron radiating, and there was the wheel. A wooden trail and the mounting was complete. The Dockyard worked splendidly, and in forty-eight hours we had a gun on wheels which in range and

accuracy was better than any weapon which either the Boers or our Army had in the field.[1]

It was heavy, of course, but the guns on these mountings could always keep up with any infantry regiment. At Durban, later on, when time was not so pressing, I had another carriage made, which was much lighter.

After the relief of Ladysmith, when the shortage of ammunition for the two 4.7-inch guns became generally known, a newspaper stated that I was responsible for the limited amount of ammunition sent into Ladysmith. I will make it quite clear now that I was in no way responsible for the shortage, that I used every endeavour to get more ammunition for them, and that had the amount of ammunition which I pressed for gone with the guns, Ladysmith would not have suffered as it did from the Boer bombardment.

On the 26th October, 1899, when the platforms were being made at Simon's Bay, the question arose as to what amount of ammunition Captain Lambton should take with him for the two guns. I suggested 5000 rounds, for the following reasons:—

1. Simon's Bay was the base where the ammunition was kept.

2. Plenty of ammunition was stored there.

3. The destination of the two guns was 1000 miles from Simon's Bay.

Captain Lambton agreed to my proposal, but could not persuade Admiral Sir Robert Harris to let him take more than one-tenth of this amount, namely, 500 rounds. A 4.7-inch gun can easily fire ten rounds a minute; at this rate the two guns could have used 500 rounds in about twenty-five minutes.

The situation was very serious. More ammunition

[1] Many guns were mounted on carriages similar to this one during the late War.

had to be obtained somehow, so I advised Captain Lambton, immediately on his arrival at Durban, to take ammunition out of the ships that were there, and say nothing to the Admiral about it. This he agreed to do, and I felt more comfortable.

On my arrival at Durban six days afterwards, the first question I asked the senior naval officer, Captain Bearcroft, R.N., who received me, was, "Did you give Lambton plenty of ammunition out of the ships here?"

He replied that Captain Lambton wired to him for 500 rounds, that he got it out of the ship, loaded it up, and had it ready to start, but he had been so hauled over the coals for sending up two 12-pounders which Captain Lambton had wired for, that he could not very well send off the ammunition without the Admiral's permission. The Admiral delayed in granting permission, and when it did arrive, it was too late—the door of Ladysmith was shut. I realised that Captain Lambton was in Ladysmith for probably a prolonged siege, and that he had only 250 rounds of ammunition per gun.

I examined the telegram book, and found as follows:—

"*31st October.* From Captain Lambton to Captain Bearcroft. 'Send immediately two long 12-pounders to Maritzburg; dispatch is necessary. Send 500 rounds 4.7 ammunition.'

"*1st November, 1899.* Admiral to Captain Bearcroft. 'Guns should not have been sent to Maritzburg without authority from me; they are to be returned to the *Powerful* forthwith.'

"*1st November, 1899.* Captain Bearcroft to Admiral. 'Captain Lambton telegraphed yesterday for 500 rounds of 4.7 ammunition. Instructions are requested.'

"*1st November, 1899.* Admiral to Captain Bear-

croft. 'No men, guns, or ammunition are to be landed without permission from me.'

"*2nd November, 1899.* Admiral to Captain Bearcroft. Telegram 285. 'Send 250 rounds shrapnel shell and lyddite to Lambton; remainder will be sent in *Puttiala* arriving at Durban on the 7th. Lambton has been informed that ships at Durban are not under his orders and he must demand ammunition from me.'"

The Admiral then appears to have altered his mind, and decided to let Lambton have the ammunition he had asked for. Later on the 2nd of November came telegram 286. "In addition to 250 rounds approved by telegram 285, send 250 rounds common shell."

Captain Bearcroft immediately on the receipt of the Admiral's first telegram took 250 rounds out of the truck he had loaded up and sent it on by a special train to Ladysmith. On receipt of the second telegram, he sent off the other 250 rounds by another special train. As stated, it was too late, and both the trucks of ammunition were sent back to Pietermaritzburg. Captain Lambton had to go through a siege of 119 days with only 250 rounds of ammunition per gun. How ably he eked out this very limited supply is mentioned in Sir George White's dispatch:—

"Captain the Honourable H. Lambton, R.N.,[1] reached Ladysmith in the nick of time. He brought with him two 4.7-inch and four 12-pounder guns, which proved to be the only ordnance in my possession capable of equalling in range the enemy's heavy guns. Although the ammunition available was very limited, Captain Lambton so economised it, that it lasted out to the end of the siege (119 days), and under his direction, the naval guns succeeded in keep-

[1] Now Admiral of the Fleet Sir Hedworth Meux.

ing at a distance the enemy's siege guns, a service which was of the utmost importance."

But to return to my narrative: at Cape Town I met Prince Christian Victor of Schleswig-Holstein, who had come out to join his regiment, the King's Royal Rifles, only to find it shut up in Ladysmith.

The Prince told me he had volunteered to serve anywhere pending the opportunity of joining his regiment. He was a very keen soldier, but he was a prince, and the authorities did not like to take the responsibility of sending him to the Front. He knew every gun the Boers had got, and was one of the few officers I met who understood the importance of heavy guns in the field, and who fully realised our comparative impotency in regard to artillery. After our interview, he wrote to me that he had talked to more than one General about heavy artillery, but could not get them to see that Railhead would in many cases be our fighting position, and that we could bring up guns of any calibre we liked. Subsequent events showed how sound were the views of this keen soldier.

By the end of October, 1899, Ladysmith was shut in. The Boers were south of it at Tugela, and there was nothing to prevent them marching down and taking the undefended Durban.

Admiral Sir Robert Harris informed me that the High Commissioner had appointed me Military Commandant of Durban; that I was to proceed there in H.M.S. *Terrible,* and take what steps I thought necessary to place the town in a defensive position, utilising the *Terrible's* officers and men, and the officers and men of the other ships stationed there. I had, in fact, *carte blanche* to do anything I could. We left Simonstown on the 3rd

November, and I took all the campaigning stores that I could lay my hands on.

Prince Christian Victor came round in the ship with me, as the authorities at the Cape would not take the responsibility of sending him to the Front, and, with a plan of Durban which I had, we discussed the best means of defending it. I found my companion wonderfully quick in recognising the vantage points which it would be essential to hold. We arrived at Durban on the 6th November, and on the following day I rode round the approaches to the town with the Prince and Major Bousfield. We definitely settled where the guns should be placed, arranging for guides to pilot the various detachments to their positions.

On the morning of the 8th the defence force, consisting of 30 guns and 450 officers and men, under the supreme command of Commander Limpus, ranked up in the main street of Durban. By ten o'clock the 100 bullocks and 60 horses were spanned-in to the guns and waggons. Commander Limpus reported that he was ready. I sounded the advance from the Town Hall, the band played "A Life on the Ocean Wave," and the little army started. Prince Christian Victor, with the Mayor of Durban and other civic dignitaries, watched the procession with me from the Town Hall, and the loyal Natalians cheered to the echo. The sailors, in khaki and khaki-coloured straw hats, looked very well. The officers were similarly dressed, but carried a telescope instead of a sword. I thought it would be more useful, and it turned out to be so.

By 4 p.m. all approaches to Durban by road or rail, both east, north, and west, were guarded by batteries, an armoured train was in readiness, and I was able to wire to the Governor, Sir Walter Hely Hutchinson, and to Admiral Sir Robert Harris, that Durban was safe.

Nine years afterwards General Botha told me that but for these guns he would have flown the Vierkleur over the Town Hall at Durban, and he certainly could have done so, for the Boers were south of the Tugela in possession of the railway, moving rapidly, and we had no army in Natal. Indeed, Pietermaritzburg, the capital of the colony, was considered in such jeopardy that the archives were kept packed ready for dispatch to Durban. Afterwards troops came in very rapidly and were rushed through to Estcourt, and the Boers fell back, eventually recrossing the Tugela.

Having assisted me in making these dispositions for defence, Prince Christian Victor left for Pietermaritzburg in the vain hope of getting to the scene of the fighting north of Estcourt, and on November 12th he wrote to me as follows:—

"Government House, Natal,
"November 12th, 1899.

"Dear Captain Scott,

"I have been meaning to write for the past few days to thank you for all you did for me, and to say how much I appreciate your kindness during the two days I spent on board the *Terrible*.

"We were much relieved here at the arrival of the troops, and I must say this battalion of the West Yorks Regiment contains a splendid body of men. I hear we get 12 battalions of infantry, the Highland Brigade Light Infantry Brigade, and the English Brigade, so that eventually we shall have 24 battalions of infantry here; we want guns, and I have impressed H.E. with the importance of the naval guns, and I think he is quite of my opinion.

"We understand that on Tuesday last they attempted an attack on Ladysmith, and from all accounts were repulsed with heavy loss. I believe about 200 were killed; all accounts point to this number. I take it that in about ten days' time we shall move

forward to the relief of Ladysmith, but all depends on our artillery; we must have guns; I hope you will arrange with General Clary to bring up your guns.

"White wires the enemy have 22 guns of superior calibre to his, and it is urgent to relieve him as soon as possible. From what we can gather, something has gone wrong in the Boer camp; they are very much depressed, but what it is we cannot say; I don't believe the rumour of Joubert's death, and I don't know that it would be a good thing for us, as he is old now and is not a dasher.

"I think I shall be employed for a time with General Hildyard; he wants some one to help him with his work; it would suit me very well.

"Yours very sincerely,

"CHRISTIAN VICTOR."

He next wired to me that he could not get to the Front, and had nothing to do. I replied that I was very hard pressed in starting martial law, and had no military man with me, and that I could give him plenty of work. Thereupon Prince Christian Victor returned to Durban, joined my staff, and greatly assisted me in framing rules and in carrying out martial law. Then General Buller's arrival, towards the end of November, brought him his longed-for opportunity. He proceeded to the Front on the staff of General Hildyard, and took part in all the battles up to the relief of Ladysmith.

As soon as he reached Durban, General Buller examined a 4.7 gun. I told him the range, and of some forced marches I had made the crews do for exercise. One of these marches was as follows. I wired to Commander Limpus—"Take a 4.7 gun without oxen to Umgeni (6½ miles), fire a round, report time of leaving and time of return." In five minutes, I got a reply —"Have left"—and four hours afterwards I rode out to meet them returning. They were almost back at their

camp, and coming up a hill. I have never seen a finer sight. The 100 men were marching magnificently, pulling for all they were worth. It was November, that is to say, the height of summer in Natal. Everything they had on was sweated through. When they saw me they broke into double time, and Commander Limpus, watch in hand, said, "We shall do it in 4½ hours," and they did. This was enough for General Buller, and the next day he wired to send the two 4.7-inch guns and four 12-pounders to the Front, as soon as possible. In our little camp the news was received with cheers, and one sailor remarked that what had done it was that "—— pull up from Umgeni." I telegraphed to have a special train ready to start at five p.m. and to clear the line (it was a single railway line); at a quarter to five I was at the station, and at five o'clock to the minute, the train, with guns, ammunition, officers, men and stores steamed out of the station.

The General Manager of the Natal Government Railways, Sir David Hunter, was a magnificent man to deal with. Nothing was impossible with him or even difficult, and no paper work was required, nor had one to find an exacting official to deal with. Any request that reached the works got put in hand at once somehow, and they made everything right for us, from gun mountings to gun sights.

On the 28th November, General Buller wired to me that I could call in the guns defending Durban, put them where it was convenient for the men, and where they would be given least duty. This consideration for the men was characteristic of General Buller, and made him beloved by all who had the honour of serving under him.

The railway works were so well found that they were quite competent to make mountings for 6-inch guns. I got out a design, and wrote to General Buller asking him

if he would like some of these weapons. He replied that Admiral Sir Robert Harris had made such a point of not further denuding the ship of guns that he did not like to ask him. I believe that if General Buller had had six 6-inch guns at the Battle of Tugela, Ladysmith would have been relieved three months earlier than it was.

The only way that Ladysmith could communicate with us was by pigeon. Several owners of pigeons at Durban and the surroundings had sent their birds into Ladysmith before it was invested. These birds, with their message fixed in a quill, were freed and at once made for their home. If the home was in Durban, I got the message quickly enough, but as some of the homes they returned to were ten or twelves miles out of the town, there was often a delay in the message reaching me. Then I had to decipher it, and wire it to General Buller. Only a very few pigeons belonging to Ladysmith were in Durban. They were soon used and we had no communication.

I suggested to General Buller that I should mount a searchlight on a truck as I had done to get communication with Kimberley. He wired—"Yes, as soon as possible. It is most necessary." Anticipating his reply I had signalled to the *Terrible* to send a searchlight on shore, with a flasher which we had made on the venetian-blind principle. On receipt of the General's telegram I telephoned to Sir David Hunter that we wanted a boiler and trucks. He replied, "We shall work all night, and be ready to-morrow." I dispatched my energetic torpedo officer, Lieutenant F. A. Ogilvy, to find a dynamo. He found one in a dredger and spent all night getting it out of her. By noon the next day the installation was complete, and the train steamed away to Frere. At midnight Lieutenant Ogilvy wired to me—"Have flashed a long cipher message from General Buller to Sir George

White." After this we had no difficulty in communicating with Ladysmith.

General Buller found the long-range guns so useful that he was continually telegraphing for more, and by the 8th of December all had left Durban, the total being two 4.7-inch guns and sixteen long-range 12-pounders, all on the extemporised carriages.

On the 15th December they were in action at the Battle of Colenso, and General Buller in his dispatch wrote: "Throughout the day the two 4.7-inch guns and four 12-pounder naval guns were being admirably served, and succeeded in silencing every one of the enemy's guns they could locate."

For exceptional service during this battle, Mr. E. B. Hutchinson, midshipman, and Mr. J. Wright, gunner, of the *Terrible,* were awarded the Conspicuous Service Cross.

CHAPTER VII

MARTIAL LAW IN DURBAN

Military Commandant of Durban—Multifarious Duties—Censorship: an Effective Treat—The Spy Trouble—A Boer Agent's Claim for Damages—Contraband Difficulties—The *Bundesrath*—Guns for General Buller—A Gun Mounting in Fifty-six Hours—Hospital Ships—Mr. Winston Churchill—Relief of Ladysmith—A Letter from Sir Redvers Buller—Farewell to Durban.

When I took over the military commandership of Durban, there was scarcely a man left in the town except those who, by nature of their business in connection with the war, were precluded from going away to fight. The Colony of Natal was loyal to the backbone.

Martial law had been proclaimed a few days before I became Commandant by my predecessor, Colonel Bethune. He had ordered all the native drinking places to be closed at 9.30 p.m., and no one was allowed outside their houses after eleven p.m., unless they had a pass signed by the Commandant. Owing to the absence of my predecessor, this order for the few days it had been in existence had not been very rigidly enforced.

I spoke to the head of the police, and about forty people spent a night in gaol. The next night at a quarter to eleven, I made a tour of the town with Superintendent Alexander. Everybody was on the run, and when eleven o'clock struck, the town of Durban was like a city of the dead. These satisfactory conditions continued throughout the period of my command.

The law was very necessary. The number of police was limited, and the town was full of spies and crimi-

nals sent down from Pretoria and Johannesburg when war broke out.

The inhabitants were not inconvenienced, as passes were liberally given. On the other hand, burglary and drunken brawls disappeared, and the Magistrate, who generally had a busy time, told me that he had no cases.

One night I was arrested by a policeman—a new hand who did not know me. I had no pass. He said, "You do not look a bad 'un, but my orders are 'No pass, police station,' so come along." At the station I was recognised, so they let me off. I made a note in the charge book commending the constable for doing his duty so well. Superintendent Alexander told me that after this remark I should be well looked after, and I was. Policemen appeared to spring up everywhere with "Halt, your pass, please."

As an office in Durban, I used the Drill Hall, and my staff consisted of Major Bousfield, of the Durban Light Infantry; Mr. Alexander, Superintendent of the Police; Captain Frazer, who acted as Press Censor; Mr. E. H. Brooke, of the Criminal Investigation Department; Assistant-Paymaster W. F. Cullinan, R.N., who was my secretary, and Mr. R. A. Laycock, clerk, R.N.

Major Bousfield was a barrister with a large practice. Unable to go to the Front with his regiment on account of his health, he determined to assist in the war somehow or other, and gave up his business to join my staff. He worked from nine in the morning till, very often, twelve at night, and his services were afterwards rewarded with a C.M.G.

Captain Frazer looked after the Press and opened all the letters, from which we derived a great deal of information. Some we re-posted, some we kept, and these I sent on to the Governor, Sir Walter Hely Hutchinson, who was making a collection of them. The language in

some of them, especially those from ladies, was shocking. One lady writing from Pretoria to a friend, said that the British prisoners taken outside Ladysmith had just come in, and explained what she would like to do to each British officer.

Orders were given to the Press that all matter relating to the war must go to the Censor. The editor of one of the Durban papers called on me and asked what would happen if they put in something without the Censor passing it. I explained that one of my sailors would come round to his office and chalk up on the door "Shut." That was all that would happen. He bowed politely and echoed, "Oh! *that* is all that would happen." The Press were really very good. I only once had to put this rather drastic rule into operation.

In ordinary law a person is considered innocent until he is proved guilty. In martial law, the boot is on the other leg. The person is considered guilty until he can prove his innocence. This fundamental principle gave me facilities for dealing with the suspects and spies, and we very soon had them all safely lodged in the prison.

A rumour got about that I had condemned one of these suspects, a Mr. Marks, to be shot, and the Boer Government wrote to say that if he were shot, they would shoot six British officers. The Imperial Government had to inform them that this would be a violation of the recognised custom of warfare. As to Mr. Marks, there was never any intention of shooting him; he was only being taken care of.

In Durban there were many Boer agents who attempted to buy war requisites, and send them to the Portuguese town of Lorenzo Marques, whence they would be dispatched to Pretoria.

For a few days we did not know how these agents communicated with Pretoria, since their letters did not

go through the post. Mr. Sergeant Brooke, who always found out everything, one day brought me some letters incriminating two of the agents.

He informed me that their procedure had been to go on board the steamer just before she left for Lorenzo Marques and put the letters into the ship's box, thus evading the censorship. One of the pair, a Mr. X, as I would not let him go back to Lorenzo Marques, asked leave to go to Capetown on account of his health. I could not withhold permission, and having reached Capetown he took legal proceedings against me, claiming £15,000 damages. Field-Marshal Lord Roberts sent the claim on to me, and requested that I would wire if I had a satisfactory answer to give. I telegraphed to that effect, and in my subsequent reply was able to answer each paragraph of the lawyer's communication by quoting from his (Mr. X's) own letters which, quite unknown to him, had come into our possession. Two of the paragraphs were as follows:—

The Lawyer's Letter.

"Our client is a loyal British subject trading at Lorenzo Marques. He went to Durban solely for the benefit of his health, and with no intention of procuring flour for the Boers.

"Our client, finding it was necessary for him to obtain permission from the Commandant to return to Lorenzo Marques, called upon Captain Percy Scott, and was astonished at being told that he could not return."

Extracts from Mr. X.'s Letter to his partner in Lorenzo Marques.

"Wire Pretoria that I have got the flour. It will leave here in Saturday's boat. Be careful what you write, as all letters are examined.

"They have got something. Your letters will get me into prison. The flour, just before the boat left, was taken out by order of the Commandant. I have to pay for shipping and unshipping it, and now it is on my hands. I very much doubt if I shall be able to get back. I have to see the Commandant to-morrow."

Mr. X's letters and those from his partner clearly showed that they were procuring flour for the Boers, who were short of the commodity and paying very high prices for it.

I ended my letter by suggesting that if Mr. X made any further claim, he should be prosecuted for perjury.

The Field-Marshal wired to me that my reply was quite satisfactory, and that Mr. X had been informed in the sense of the last paragraph of my letter.

The currency business gave us a lot of trouble until an order given by Sir Alfred Milner,[1] put matters right. The Boer agents had brought all their money down with them in Transvaal notes, and the proclamation forbade the banks cashing Transvaal notes. This proclamation, however, hit our refugees from Pretoria and Johannesburg and other Boer towns very hardly, as their money was also in notes. The difficulty was solved by Sir Alfred Milner's telegraphic instruction that notes could be cashed if I endorsed them. I endorsed the notes for the refugees, but refused to endorse the large sums required by the Boer agents. Finding they could get no money, these gentry left for Capetown, and we had much less trouble.

We were rather bothered by people who, not understanding our office, thought we dealt with all sorts of cases, including matrimonial differences. Lunatics sometimes called, and put before us plans for destroying all the Boers by poison, or asphyxiating them by firing shells containing chloroform. It was left to the German barbarians to introduce such methods of perverted intelligence in the late war.

I got a letter from a mysterious gentleman one day, saying he wished to see me, but not at my office. Finally, after some difficulty—for neither the club nor the hotel

[1] Afterwards Viscount Milner.

suited him as a rendezvous—a place of meeting was arranged.

He had come from Capetown, and wanted permission to go on to Beira, on a somewhat peculiar mission. The authorities at Capetown had learned that the Boers were getting plenty of gold from the Johannesburg mines, but that they were short of dies to coin it into money. Intercepted letters showed that dies had been made in Germany and were coming out in a steamer which called at Beira.

My mysterious visitor wished to meet that steamer and take a passage in her to Lorenzo Marques, where the dies were to be landed. I arranged passages for him, and on his return to Durban a few days afterwards, he informed me that during the night he was in the steamer he secured the dies and dropped them overboard. I believe that this neatly executed raid inconvenienced the Boers very much.

In addition to being Military Commandant, I was the Senior Naval Officer on the Natal side, and had to deal with the scrutiny of vessels carrying contraband of war. All vessels bound for Lorenzo Marques were boarded, and their papers examined. To make matters difficult, the authorities at home kept on changing their minds as to what was contraband of war, and what was not. I received strings of contradictory telegrams on the subject. We were also supplied with very bad information. When I got a telegram to seize a ship on the ground that she had guns or some contraband of war on board, it invariably turned out on examination that she contained no contraband goods, and the Government were obliged to pay heavy damages for demurrage.

One day I got a wire to seize and examine a German ship, the *Bundesrath,* as it was certain that she was carrying arms for the Boers. A cruiser brought the ship

into Durban, and the whole of her cargo was taken out. Nothing of a contraband nature was found—another example of bad information. From intercepted letters I discovered that four of her passengers were Boers returning to fight against us; they admitted the fact to me in writing.

According to my reading of International Law, they came under the heading of "Enemy belligerents in a neutral ship," and I was entitled to make prisoners of them. I did so. Four days afterwards, when we had got all her cargo out, I received a peremptory telegram to replace the cargo at once, and allow the *Bundesrath,* with the four Boers, to proceed to Lorenzo Marques. I believe the country paid Germany £50,000 for demurrage. Our Secret Service was, I am afraid, not very good, and why I was made to release the prisoners I have never been able to understand.

On the 16th January, 1900, while General Buller was away at Spion Kop with both the 4.7-inch guns, General Barton wired to me to ask if I could mount a 4.7-inch gun on a railway truck, as he wished to shell a new position that the Boers had taken up.

Sir David Hunter provided a truck strengthened up with timber. On it we put a platform mounting, securing it with chains. Owing to the amount of energy absorbed by the hydraulic cylinders, very little of the recoil was transmitted to the truck. Lady Randolph Churchill fired the test round, and the gun was christened after her.

Later on General Buller wired to me to ask the Admiral if he could have two more 4.7-inch guns mounted on platforms similar to the Ladysmith guns. Sir David Hunter put them in hand instantly. We got a couple of guns out of H.M.S. *Philomel.* In a few hours the mountings were completed, and the guns went off by spe-

cial train to Chievely, and took a very active part in the final bombardment of the Colenso position which, when forced, opened the road for our troops into Ladysmith.

General Buller subsequently informed me that he liked this pattern of mounting. Enormous rapidity of fire could be got out of it, as the aim for the next round was very little deranged by the act of firing. Moreover, what was really a fortress gun was virtually converted into a field gun, and its position could be quickly changed.

On the 8th February, having an appointment with the Governor at Pietermaritzburg, I had just taken my seat in the 4 p.m. train, when the following telegram was handed to me: "Clear the line. Urgent, No. 383. Have you a 6-inch gun on carriage that I could move a mile or so across the flat? If you have, telegraph in my name to Admiral, and ask if I may have one for a few days. Utmost importance. If possible, I want it Monday, 12th, and you to work it.—Buller."

I wired back: "General Buller, Chievely. Six-inch gun on mobile mounting will leave here on Sunday night. —Percy Scott."

Then I began to consider how the mounting was to be made in 72 hours. I sent a steamer and a big lighter out to H.M.S. *Terrible,* and signalled to her to send a 6-inch gun on shore. I saw Sir David Hunter, and his men were started on at once. Fortunately I remembered that at Pietermaritzburg there was a pair of iron wheels made for a 4.7-inch gun, but discarded on account of the tyres being too narrow. By 10 p.m. we had the gun from the *Terrible* and the wheels from Maritzburg in the factory. The men worked all night, putting broader tyres on the wheels, and formed up an axle-tree and trail. On Saturday night at 12 o'clock, 56 hours after I received the telegram, the mounting was practically finished. The work of the Durban men on this mounting was magnifi-

cent; some worked continuously for the 48 hours during which it was under construction.

On Sunday morning 200 men were landed from the *Terrible.* We dragged the gun with ropes about two miles down to the beach, fired a few rounds as a test, and took it back to the station. There it was entrained and dispatched to Chievely, and it arrived at daylight on the 12th.

The gun was used for bombarding the Boer positions at Colenso, and fired 600 rounds, some at a range of 16,000 yards, and we found that spotting could be carried out even at this extreme range.

Among many other things, hospital ships were brought within the province of my office. General Buller wired to me: "Can you get a steamer and convert her into a hospital ship?" The steamer agents met me very readily, and in a very short time we had two well-equipped hospital ships.

During the last week in January a hospital ship, flying the Union Jack and the American Stars and Stripes, anchored in the roads. This was the *Maine,* a vessel that had been bought and equipped by American women as a very practical mark of their sympathy for the sick and wounded soldiers in South Africa. Lady Randolph Churchill, the president of the committee of ladies who raised the necessary funds, was on board the ship. Mr. Winston Churchill, who was at Pietermaritzburg, came down to meet his mother.

On the following day when the ship came into harbour, the Mayor of Durban and I called. The Mayor Presented Lady Randolph with an address from the Natalians, which expressed their appreciation of the American ladies' sympathy. I presented a martial law pass, and the manager of the Natal Government Railway placed a saloon carriage at her ladyship's disposal to

travel anywhere she wished. We thus did our best to recognise the kindly thought and generosity of a friendly Power.

Mr. Winston Churchill arrived at Durban as correspondent of the *Morning Post*. He was twenty-six years of age, had written well, had been in the Army, and had seen active service with the Malakand, Tirah and Nile expeditions. He had contested Oldham as a Unionist, and nearly gained the seat.

A fortnight after his arrival, he went for a trip in an armoured train dispatched to reconnoitre the Boer positions. No precautions were taken, and the Boers getting round to the rear, pulled up the line. On the return journey the engine was derailed and a heavy fire opened on the train by a commando who had concealed themselves with two field guns.

Mr. Winston Churchill displayed great gallantry in helping to get the engine and a truck on the line again under a heavy fire, and I have always thought that his gallantry might have been rewarded. He was a civilian, it was his business to run away, and he could have done so, but he stayed to fight. As a rising man, however, he had many enemies, and instead of getting a decoration, he had to bring a libel action against some of his defamers.

This unwisely planned reconnoitre cost 50 killed and wounded, and 54 men were made prisoners, among them some of our sailors and Mr. Winston Churchill. A month later I received a telegram announcing the latter's escape.

On the 23rd Mr. Churchill arrived at Durban and met with a great reception. The loyal Natalians, delighted at his outwitting the slim Boers, dragged his rickshaw in triumph to my office. He looked very dishevelled, tired and worn, so I suggested he should take a

rest for a day or two at Durban. His reply was, "When is the next train for the Front?" I told him in half an hour. He decided to go by it. I accompanied him to Pietermaritzburg, and 48 hours after his arrival at Durban he was back on the spot where he was taken prisoner a month before.

On the way up in the train, he told me about his capture and escape, and of a plan he had devised for the 4000 English prisoners in Pretoria to break out, seize the armoury, where there were plenty of rifles, make prisoners of Paul Kruger and Mr. Stein, and hold Pretoria until the British arrived. With a good leader, this daring scheme would undoubtedly have succeeded. What a chance thrown away! Fancy the excitement in England if a telegram had announced: "English prisoners have taken Pretoria. Kruger and Stein prisoners of war." How often people have the ball at their feet, but will not kick it!

Nine years after the war I met a Boer officer at Pretoria who was in charge of our prisoners. I told him the story, and he said that it would undoubtedly have succeeded, as the prisoners were inadequately guarded. He added that the authorities realised the thing could be done, and that was why, after Mr. Churchill's escape, they stopped all communication between the officers and men.

On the 29th March, Sir Walter Hely Hutchinson and Lady Randolph Churchill were dining with me on board the *Terrible,* when the welcome news arrived that Ladysmith was relieved. I ordered the main brace to be spliced (for which I subsequently got hauled over the coals by the Admiralty). Every one in the town who could get a firework, let it off, and there was jubilation all round. On the strength of it the prisoners in the gaol naïvely asked if they could not be let out. I re-

flected, however, that Durban was very peaceable with them under lock and key.

A few days afterwards I went up to Ladysmith to congratulate General Buller and to say good-bye to him, for I realised that I should now be soon moving on to China. I saw Prince Christian Victor, looking the picture of health, and in a great state of delight at having been in all the battles. Six months later, he succumbed to that terrible enemy of our troops, enteric fever, and was buried at Pretoria.

Early in March I received the following letter from Sir Redvers Buller:—

"Ladysmith,
"March 7th, 1900.

"My dear Scott,

"After as long a delay as I dared, I am with a heavy heart sending back all the guns' crews of the *Terrible,* and, worse still, appointing a Commandant to Durban.

"Needs must, so I cannot help it, but I cannot let you go without writing to tell you how grateful to you I am for all you have done for me, and for the splendid manner in which you have administered Durban.

"Few people, I fear, realise how difficult that work has been, because it has been so well done. But I think both the Governor and I do realise what your work has been, and certainly I am most grateful to you.

"Of course I shall put this also forward officially, but I could not let you go without a God-speed and a word of thanks.

"Yours very truly,
"Redvers Buller."

On the 13th March our contingent returned to Durban, rejoined the ship and changed from khaki to naval uniform. I spent a fortnight in clearing up my duties

as Commandant of Durban, ready for turning the post over to my successor, Colonel Morris, C.B. From the Governor of the Colony, as from the Town Council of Durban, I received messages of appreciation, which I valued greatly.[1] On the 26th I said good-bye to all my good friends at Durban, and a farewell dinner given to me at the Club demonstrated what true, honourable and loyal citizens to the Empire I was leaving. I re-embarked on board the *Terrible,* and the next day we weighed the anchor, which had been down for nearly six months in the Durban Roads, and, with a last signal to loyal Natal, the engines began to turn round, and we shaped a course northward *en route* to China.

I lost no time in thanking and congratulating Lieutenant Hughes Onslow on the admirable way he had acted as captain of the ship during my five months on shore. Owing to Lieutenant Onslow's tact and ability the behaviour of the portion of the ship's company that remained on board was splendid. They had had no leave and a very hard and trying time, but, notwithstanding this, the highest discipline was maintained.

I congratulated Captain Limpus and the officers and men under his command on the admirable way they had behaved on shore when acting as artillery to assist the Army, and read to them letters from General Sir R. Buller and other officers paying high tribute to their conduct.

Sir Redvers Buller repeatedly referred to the assistance which the guns, mounted in accordance with my design, rendered to the Army; he mentioned the matter in his dispatches, and he wrote, on Janary 9th, 1903, that "It is impossible to overestimate the value these guns were to the Army in the field." These mountings were in the nature of an invention, and Sir Redvers suggested

[1] Cf. Appendix.

that, in accordance with the usual practice, a monetary grant should be made to me. What happened to his recommendation I do not know, but at any rate nothing came of it, though the vital character of the service which these guns on my mountings rendered was no secret at the time, and the design was revived in the Great War which has recently closed.

CHAPTER VIII

IN THE FAR EAST: THE BOXER RISING

H.M.S. *Terrible's* Welcome in the East—Hong Kong's Lavish Hospitality—News of the Boxer Outbreak—Orders at last!—Arrival at Taku—Tientsin's Plight—The Relief Column—Long-range Guns left behind—A Neglected Base—Anomalies of the Situation—Useless Appeal to the Admiral—Belated Use of the Rejected Guns—Capture of Tientsin—Relief of the Legations.

On board a man-of-war things happen quickly and are quickly forgotten. Twenty-four hours after leaving Durban, we had all settled down to our ordinary routine again and both officers and men were anxious to resume their work at naval gunnery. Those who had landed had had practical experience of a good telescope gun sight, and had learned that if a gun is truly pointed the shot will hit the mark aimed at.

On arriving at the Island of Mauritius on the 2nd April, 1900, we found a wonderful reception prepared for us. Both officers and men were most liberally entertained. I stayed at Government House with Sir Charles and Lady Bruce, and nothing could have exceeded their kindness and hospitality. At Colombo, where we arrived on the 16th, we again met with a most charming reception. We sailed for Singapore on the 22nd and *en route* we resumed our instruction in gunnery. In the Navy, competition is everything, and the *Terrible's* one idea was to beat the *Scylla's* 80 per cent. of hits on a target.

As the officers and ship's company had been working very hard in perfecting themselves in gunnery, I thought

I would give them a chance of showing what they could do. Targets were prepared, and on the 27th April I anchored in the Straits of Malacca about twenty miles from Singapore, to carry out heavy gun practice. Just as we were going to start, I received an urgent telegram from Singapore saying that they had prepared a reception for us, and asking me if I would arrive on the morrow. I could not say no, so our practice had to be given up. This meant that after eight months in commission we had not fired a shot from our guns, or in any way prepared ourselves for a naval engagement. Singapore gave us a great reception. For four days balls, banquets, and entertainments of every description took place. The civil and military authorities left nothing undone in entertaining my officers and men, and the Governor, Sir Alexander Swettenham, kindly asked me to stay with him at Singapore's magnificent Government House.

One of the guests at the house was Sir Alexander's brother, Sir Frank Swettenham (then Resident-General of the Federated Malay States). I had the honour of taking him up to Hong Kong in the *Terrible*. He was clever and capable, and I often wondered why he was not given a more important post during the war. He knew well the East, and Eastern manners, and was a skilled diplomatist.

On the 8th May, 1900, we steamed through the Ly-ee-mun Pass and met with a most wonderful reception. From the Pass to the anchorage off the town of Hong Kong, the water was solid with steam launches, junks and boats of every description, all decorated with flags, and all contributing to a medley of sound by cheering, blowing steam whistles or letting off Chinese crackers. In China noise is regarded as a signification of joy; on this occasion it was rather a source of grief to me, for it is a difficult passage from the Pass to Hong Kong for

a ship of such deep draft as the *Terrible*. A rock that most ships steam over had to be steamed round. With such a volume of sound dinning our ears my navigator and I had a difficulty in hearing one another.

On our anchoring Sir John Carrington came on board and presented me with the following address:—

"On behalf of the British Community of Hong Kong, we beg to offer you and to your officers and to the crew of this magnificent vessel a very hearty welcome to this colony.

"We congratulate you on the opportunity which was afforded to your ship by her appointment to this station in succession to H.M.S. *Powerful* of taking part with her in the operations in South Africa. How admirably this opportunity was used is known to all the world. We desire to acknowledge with the deepest gratitude the devoted and invaluable services rendered to the Empire by the Naval Brigade in the advance towards Kimberley and in the defence and relief of Ladysmith. We are pleased to know that these services have been cordially recognised by the Queen and by the Empire, and in particular that Her Majesty has conferred upon you, sir, a Companionship of the Bath in recognition of that fortunate combination of scientific and practical ability in you, without which Ladysmith would have lacked her most effective weapons of defence. We learn that Her Majesty has just reviewed at Windsor the Naval Brigade from the *Powerful,* and we hope that the people of this colony will have an opportunity of witnessing a similar review of your ship's company on shore.

"We agree with the late Mr. G. W. Steevens that 'the Royal Navy is salt of the sea and the salt of the earth also.' We feel that we cannot do too much to show our appreciation of the Navy, of the Naval Brigade, and of the services rendered by the *Terrible* in South Africa at a very critical period. In these circumstances we account it a great privilege to be able to extend this welcome to yourself, your officers,

and the crew, and to ask you to give us the pleasure of receiving you and them as guests at some entertainments which we have been arranging for your and their honour."

On behalf of the officers and men of the *Terrible* I accepted the address and thanked Sir John. I was then handed a programme of entertainments that had been arranged for us. Those who have been in Eastern countries will know how hospitable they are, and how well they entertain. Hong Kong is particularly well famed in that respect. There were balls and dinners every night and mixed bathing in the afternoons. My officers forgot war and made up their minds that the remainder of the commission was to be gaiety and amusements. We had about ten days of it, and then I received a letter indicating that the Boxer rising was a serious matter and I anticipated that the Navy would again be called upon to assist the Army. Every day we expected orders to go north, so I mounted up four long 12-pounders in readiness. Nevertheless, no orders came; with a serious war going on, we were left for weeks at Hong Kong to amuse ourselves with dancing and dinner parties.

At last, on the 15th June, orders came for the *Terrible* to proceed to Taku and take up three companies of the Royal Welsh Fusiliers. We left the next day, and during the passage made arrangements for landing men and guns as might be required.

At daylight on the 21st June, 1900, we arrived at Taku, and found a large fleet there of all nationalities. The general state of affairs was very serious. The Commander-in-Chief, Admiral Sir Edward Seymour, had left his ship on the 10th of June to take command of an international expeditionary force consisting of 2000 officers and men, of whom 900 were British seamen and marines from the Fleet. The object of the expedition was to

reach and relieve Peking, which was besieged by the Boxers; it was feared that if they gained possession of the city all the Europeans would be massacred.

We learned that the Admiral had got north of Tientsin with his force by rail, but that since the 13th, that is three days after he started, nothing had been heard of him. Tientsin, garrisoned by about 3000 troops, was closely besieged by the Boxers and all communication was cut off. The garrison were in dire want of food and ammunition, and they had no guns of either power or range to reply to the heavy bombardment from the superior Chinese artillery. It was Ladysmith over again.

The Taku forts that guard the entrance to the Peiho River, on which Tientsin is situated, had been taken by the allied forces, but a small fort a little higher up the river was still in the Boxers' possession. Hence the river could not be used by boats to communicate with Tientsin, and the railway was useless because it had been partially destroyed by the Boxers. Such I found to be the state of affairs when we arrived.

I was glad to be able to inform Admiral Sir James Bruce, who was the senior British naval officer, that we had four 12-pounders ready to land, which would be equal in range to any of the Chinese guns that were bombarding the European settlement at Tientsin.

To my amazement the Admiral informed me that one gun would be sufficient. It was to be landed in the morning and go with the relief column under General Stössel.

The Tientsin relief column started on the following morning, its composition being as follows:—1200 Russians, 30 Italians, 150 Americans and 550 British (300 Royal Welsh Fusiliers, 150 seamen, 100 Marines, with one long-range 12-pounder gun).

It was well known that the Tientsin garrison had no

guns except obsolete, muzzle-loading 9-pounders. It was equally well known that the Chinese were bombarding the city with heavy, long-range, modern Krupp guns.

The one arm that Tientsin wanted was the long-range artillery which I had provided, but which the Admiral would not send up. I was told to go away to Chefoo and take the three guns with me. Before leaving I landed at Tongku, the base of operations, and had a look round in company with Captain Wise of the U.S.A. Navy. He pointed out that here was a base with no Commandant, no one in authority, no one to regulate the landing of troops, no accommodation for the sick and wounded sent down from the Front, no one to look after stores, no reserve of ammunition, in fact, no provision of any kind. His time was fully employed in looking after the train service, and he asked me if I would come on shore and put things straight. I had been Commandant for so long that I was not anxious to perform the duties again, but in the national interest I promised to write and offer my services to the Admiral. I explained to this American officer that on account of jealousy I did not think the services of the *Terrible* would be used if they could possibly be done without. He said at once, "Oh, then that is why the guns that you had ready have not been sent to the Front." I informed him that not only were they not accepted, but I was told to take them away with me. He expressed himself forcibly and to the point, ending up by saying, "The freak will cost them some lives and some unpleasantness in Tientsin."

We then discussed other anomalies of the situation. The supposed invulnerable Taku forts, mounting about 150 guns, were built to prevent any one entering the Peiho River, and so getting to Tientsin. We had captured the forts and wanted to go to Tientsin. Why did we

not take a small fort, almost in sight from where we were standing, which was blocking our use of the river? Captain Wise declared that fifty men could do it, and he was perfectly correct. A boat's crew of ten men subsequently took it; the Chinese all ran away. The second anomaly was that for fourteen days the railway which we required so badly was unavailable as the Boxers had destroyed certain parts of it. On this point my companion remarked: "It is your railway. Why does your Admiral not wire to Japan for a shipload of sleepers and metals? They could have been here before this?"

On my return I put all the points before the Admiral and made another effort to get the other three guns sent up to help Tientsin. The appeal was useless. The Admiral would neither send up any more guns, nor order material to repair the line, and he expressed himself quite satisfied with the arrangements at the base. Consequently the Tientsin European settlement was almost entirely destroyed by the Chinese guns. The Russians, taking advantage of our apathy, repaired the railway line, and then claimed it, and we had great difficulty in regaining its possession.

I took the three guns away in the *Terrible* to Chefoo, and while we were there, occupying ourselves once more with dances and dinner parties, we learned of Tientsin's very severe bombardment. The *Terrible* was next ordered to Wei-hai-wei, which meant taking the guns still further away from where they were so urgently wanted. The *Times* thus commented on the incident:—

> "It was a grievous blunder not to send these guns up to Tientsin with the relief column in the first instance. Captain Scott had prepared four to land with the Welsh Fusiliers, but for some occult reason he was ordered to land only one, and H.M.S. *Terrible* was sent to Chefoo, where her guns were not

SPOTTING ON LADDERS IN CHINA

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wanted. This is the sort of thing that to the lay mind is incomprehensible. The settlements at Tientsin were being bombarded, it was known that they had next to no guns, it was known that the Chinese had numbers of modern ones, and yet three fine pieces of artillery ready for the road are deliberately not sent with the relieving force. The one 12-pounder that was sent from H.M.S. *Terrible* did yeoman's service; if four had been sent instead of one, the position to-day would have been assuredly less critical."

Later on, when the European settlement at Tientsin had been mostly destroyed and many lives lost, the other three 12-pounders which I had prepared were sent for in a great hurry. The allied troops there mustered 12,000 men, and it was decided to attack the native city from whence the bombardment had issued. As the result of hard fighting on the 13th and 14th of July, the Chinese were driven out and the city was captured.

Where our guns were placed the country was very flat, making spotting difficult. We overcame this obstacle by placing two long ladders one against the other and perching the spotter with a telescope on the top.

Brigadier-General Dorward, who commanded the British forces, wrote: "The success of the operations was largely due to the manner in which the Naval guns were worked by Lieut. Drummond of H.M.S. *Terrible,* the accuracy of their fire alone rendering possible steady fire on the part of the troops against the strong Chinese position and largely reducing the number of casualties."

I anticipated that after the capture of Tientsin my officers and men would return to the ship, but the value of artillery in war had been learned (somewhat expensively), and it was decided that the four 12-pounders should go with the relief force to Pekin.

The international relief force, consisting of English,

American, Russian, Japanese and French troops, with the four guns from the *Terrible,* left Tientsin on the 3rd August, 1900. Pekin was reached on the 15th, and the Legations, which had been gallantly defended for two months, were relieved. On the 7th of September officers and men who had been to Pekin rejoined the *Terrible.*

CHAPTER IX

GUNNERY ON THE CHINA STATION

A Return to Gunnery at Sea—Results of the First Prize Firing—A Machine to increase the Efficiency in Loading—The Deflection Teacher and its Effect in Shooting—Remodelling the Target—Target Practice of the Fleet—Underlining an Inference—Admirals and Prize-Firing—Back at Hong Kong—Raising the Dredger *Canton River*—Lieut. Sims, U.S.A., and Gunnery—Sir Edward Seymour's valuable Reforms—Admiralty Opposition—Prize Firing of 1901—First Ship of the Navy—The *Barfleur* and the *Terrible's* Example—The Admiralty and Improved Shooting—A Disastrous Order.

With the conclusion of the Pekin operations, H.M.S. *Terrible* had been a year in commission, and we had done no gunnery practice, as most of the crew had for seven months been employed as shore artillerists. Their experience had demonstrated to them the value of shooting straight, and the ease with which it can be carried out on shore, where the platform is steady. They had now to learn to manipulate heavy guns at sea when the ship is rolling. Both officers and men worked with a will at the instructional "dotter," and in October, 1900, after a month's course of drill, the ship carried out her first prize firing, and made 80 hits out of 104 rounds, a percentage of 76.8. The men were very disappointed at not reaching the 80 per cent. made by H.M.S. *Scylla.*

A percentage of 76.8 hits to rounds fired was far above anything that had ever been done before with a 6-inch gun, but I could see that better results ought to be obtained.

After carefully analysing the firing I came to the conclusion that the loading was not rapid enough; that

the men had not had sufficient practice in quickly altering the deflection on their sights if the shot went right or left of the mark; that the men under some circumstances could not see whether they had hit the target or not, and were therefore not to blame if they missed. These three defects had to be remedied.

To increase the rate of loading, I had an arrangement made for giving the men the requisite practice. It consisted of a breech block mounted against two stanchions with a tray behind to take the projectiles as they were put in. To ensure the ramming being of sufficient force to drive the band into the rifling, the men were compelled to send the projectile with such velocity as to make it travel the whole length of the tray. The guns' crews were frequently practised at this machine, and in a very short time their efficiency in loading was doubled.

To teach the men to alter the deflection on their sights quickly and correctly, I had an arrangement made which was christened the "Deflection Teacher." It consisted of a miniature rifle, fixed to a gun in such a manner that although it could be given a small vertical and horizontal movement, the shot from it could never go anywhere but into an iron box fixed to the muzzle of the gun. Attached to a boom over the centre of the gun was a wooden frame, into which paper targets could be placed. The boom could be traversed backwards and forwards by means of lines and a winch. Constant practice with this machine had the following results:—

(1) It taught the men to readjust their sights in accordance with their last shot.

(2) It convinced them that if they did adjust their sights correctly the shot would hit the mark aimed at.

(3) It gave the firing number practice in ordering the necessary alteration of sight, and the sight-setter practice in carrying out the orders.

Teaching the men to be certain whether they had hit or not was not as easy as I anticipated it would be. One captain of a gun, as they were then called, who fired eight rounds and made seven hits, told me that he never saw a hole made in the target after his fourth round, although he made three more.

I had some targets made of different colours, and cut a hole six inches in diameter in each one. From a distance of 1600 yards all the captains of guns examined these targets through their telescope sights, and it was demonstrated that a hole can only be seen in a target if there is a distinct contrast between the colour of the target and the colour of the water which forms its background. Hence if the water is white you want a dark target, and if the water is dark you want a white target. We most of us thought that the sea was always the same colour, a sort of dark greeny-blue, but it is not, for sometimes it is white and sometimes it is dark, and sometimes it changes from one to the other quite suddenly. This to the layman may sound peculiar, but I shall explain it later on.

In all our practices, while one man was firing, others were exercised in judging whether the target was hit; if it was a miss, they had to judge how far it was left or right, or how much it was short or over. The sailors called this "spotting drill," and christened the officer or man who was spotting the "Spotter."

Four years later, when their Lordships had learned that the only way to hit was to spot, they acknowledged the necessity of a spotter, but they objected to the name, and ordered him to be called the "Range Officer." This was stupid, because the spotter need not necessarily be an officer—our best spotter in the *Terrible* was a cook. Spotting is a gift.

Nor did their Lordships' pedantry achieve its ob-

ject; the officer or man who spots is to this day called, as the *Terrible* seamen christened him, the "Spotter."

To revert to the change in colour of the sea. When one looks along it as in firing at a target, it is of one colour in sunshine and of another colour if there is no sun. Consequently, when the sun goes behind a cloud you get a quick change from one to the other. Another element that causes a quick change is the wind. Many may have noticed that when a meadow has been harrowed, the grass differs in colour according to the way in which the harrow has passed over it. It is the same with the sea; in a calm, if a slight breeze springs up and passes along the surface of the water, you get a similar change of colour as with the harrow and the grass.

The pattern of prize-firing target then in use was very unsatisfactory. The mass of wood above water meant additional weight without additional buoyancy. The masts which carried the sail were frequently knocked down, and then the whole thing collapsed and took hours to repair. To obviate this state of affairs I obtained the Commander-in-Chief's permission to remodel the target. I placed the masts at the end of the raft, suspended the canvas from them and did away with all the unnecessary wood. This alteration was approved, and in the following year's prize firing we had little or no trouble owing to the shooting away of masts.

Details of the alterations were sent home in June, 1901, but the Admiralty declined to adopt the plan, preferring the old pattern.[1]

After every target practice I used to have posted on the notice board my comments on the shooting. On this occasion I praised highly nine out of the twelve guns' crews, but I characterised the shooting of three of them

[1] This improved pattern was not adopted for general use by the Admiralty until 1905.

as most discreditable. This opinion found its way into the Press, and one paper commented on it as follows: "The three guns that Captain Percy Scott refers to as most discreditable scored nine hits out of twenty-two shots, or 41 per cent. No other ship in the Fleet armed with these guns that year had made as much as 41 per cent. of hits, and the average was only 28 per cent., so we may infer that Captain Percy Scott considers the firing of the British Fleet as something much worse than 'most discreditable.'" That certainly was my opinion, for if two ships by giving proper instruction to the men and by using extemporised appliances could obtain 80 per cent. of hits from these guns, whereas the average of the Fleet was only 28 per cent., then the Fleet was 52 per cent. of hits behind what it might have been, or in other words the British Fleet was only half as powerful as it ought to have been.

Mr. Arnold White, who took a great interest in the gunnery of the Fleet, hit the Admiralty very hard by publishing the fact that in our most up-to-date Channel Fleet, the three most modern ships, *Magnificent, Mars,* and *Hannibal,* each armed with twelve 6-inch guns, had with their thirty-six guns made only eighty-four hits, while the *Terrible* with twelve guns had made eighty hits. By way of making the comparison still more pointed he added that two out of the three ships were Admirals' flagships.

There were very good reasons for the gunnery of the Fleet being in such a deplorable condition. The Director of Naval Ordnance, who should be the most important man at the Admiralty, was not even a member of the Board; he carried no weight and was unable to improve matters. There was no competition and consequently no incentive to improve. No notice was taken of suggestions made by officers who wished to improve

the gunnery of their ships: they were frequently snubbed and from personal jealousy their ideas were boycotted.

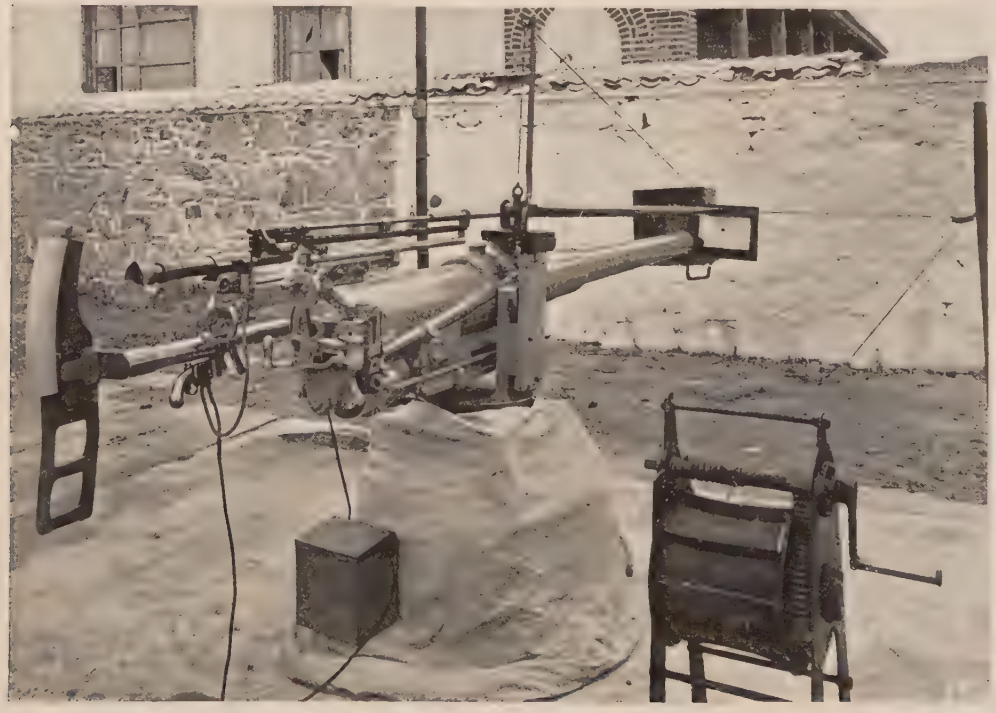
The prize firing, which was a test of the ships' proficiency for battle, was, by Admiralty order, to be carried out once a year, but any excuse was accepted for not obeying the order. The following table shows the number of ships that disobeyed the Admiralty order:

	1898.	1899.	1900.	1901.
Number of ships of the Fleet that obeyed the order	139	136	121	127
Number of ships that did not obey the order	33	32	39	47

Admirals seldom or never attended on board their flagships when firing was taking place.

I remember when I was in H.M.S. *Scylla* the case of an Admiral who devoted two days to the inspection of his ship. He visited every part of her, looked at all the paint-work, went most carefully into the dress of the men, the length of their hair and the cleanliness of their clothing. As regards housemaiding and tailoring no inspection could have been more searching. On the third day of the inspection the ship carried out the annual prize firing with her heavy guns. It might be taken for granted that the Admiral, having so carefully inspected the housemaiding of the ship, would have remained on board to witness her proficiency or otherwise in target practice, and from the results form an opinion of her fighting value. I made a bet that, as the Admiral did not attach any importance to target practice, he would take himself on shore before a shot was fired. I won the bet!

The annual return of the results of prize firing was never issued till late in the following year, when every one had forgotten all about it. It was a natural consequence of the absence of all interest in the shooting of



12-POUNDER DEFLECTION TEACHER

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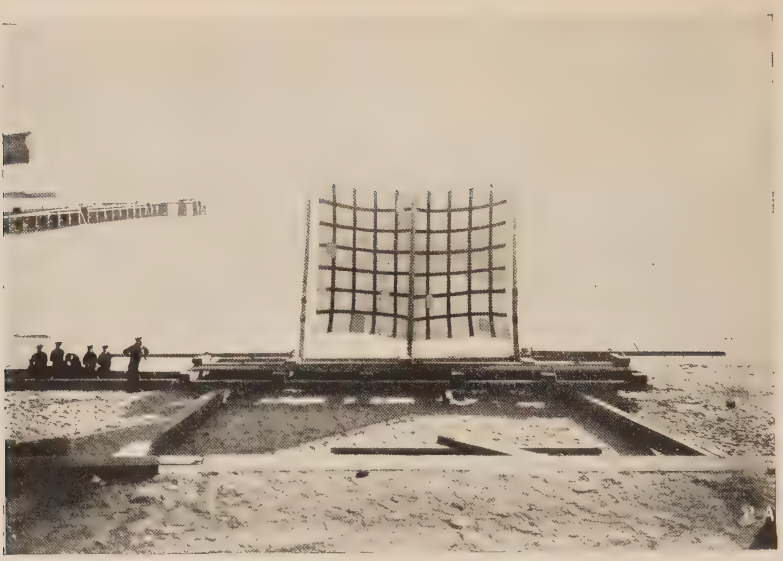
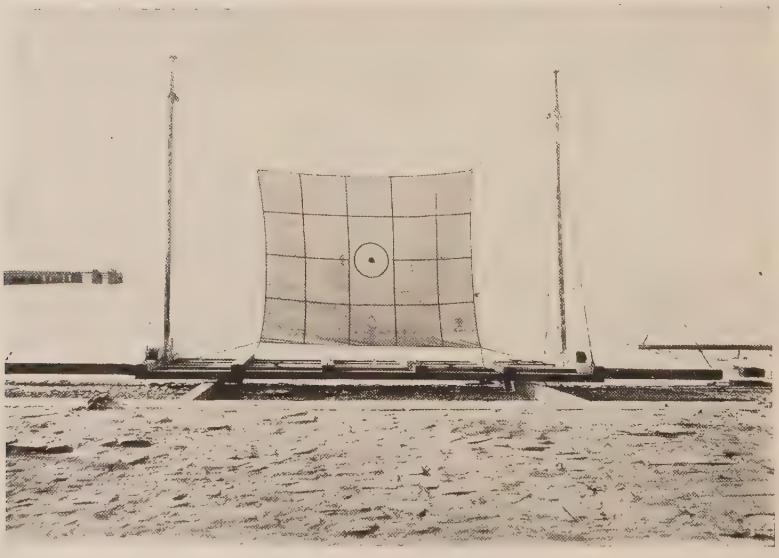


THE ADMIRALTY PATTERN, WHICH GENERALLY COLLAPSED IF HIT



THE MODIFICATION MADE ON THE CHINA STATION

the Fleet that no attempts were made to improve the gun-sights. In 1900 they were almost identical with the sights in use when I first joined the Navy in 1868.

On the 22nd November, 1900, we left Wei-hai-wei, and after a visit to Japan arrived at Hong Kong. The island had been recently visited by a typhoon which did enormous damage in the harbour and caused an appalling loss of life amongst the Chinese, many of their junks going to the bottom with all hands. Among other wrecks was a dredger called the *Canton River*. She had come from England to work on the new Admiralty Docks. She was 180 feet long, with a beam of 36 feet, and displacement of 1000 tons. During the typhoon she was blown over and sank, three hundred and eighty feet from the sea-wall, turning bottom upwards. The first operation towards getting her up was necessarily to right her, and attempts had been made to do this, but without success.

On the 17th December the *Terrible* arrived at Hong Kong, and, finding the dredger still bottom up, I made an offer to right her. The offer being accepted, work was commenced on the 2nd January, and she was righted on the 18th.

The turning of the dredger was effected mainly by parbuckling, but this was assisted by lifting her on the opposite side with "lumps," and by forcing air into her, which displaced a large amount of water and thereby lightened her. The parbuckles were four in number, three of them capable of giving a pull of 100 tons each, and the fourth 50 tons—total pull: 350 tons. The parbuckles were wire runners and tackles, with manilla five-fold purchases, the hauling parts of which were taken to steam winches on shore. The standing parts of the wires were taken to anchors buried in concrete. In all eight anchors were used, varying in weight from 2½ tons to 15 cwt. In order not to bring too great a strain on

any part of the sea-wall, they were distributed over a length of 100 feet.

The parbuckle chains were three double and one single part of 1⅝-inch cable: they were passed with a complete round-turn round the vessel, the bights of the double ones and the end of the single one being secured by shackles or lashings to suitable places on the upper deck; the opposite ends were brought up over the bilge and on to a barge where the purchases were secured. Cradles were placed on the bilge of the dredger to distribute the strain and give leverage; the barge was relied upon to ensure an upward pull. (See Plate 1.) The connection between the parbuckle chains and the purchases offered some slight difficulty, as it was found impossible to get any block which would stand a strain of 100 tons. It was overcome by making extemporary blocks out of the dredger's spare links, which had holes in them at both ends. Sheaves were cast and mounted between the links on a pin of the same diameter as the holes; at the other end a similar pin was put through with a sleeve piece on it to prevent the two parts closing in. This sleeve had two thimbles on it, round which was passed a bale-sling strop, the bights being shackled to the ends of the parbuckle chain. This precaution was taken to ensure the chains bearing equal strains. (See Plate 1.) Counter parbuckles were laid out to prevent the vessel coming bodily in instead of turning.

A lift on the opposite side was obtained from the bow of a tank steamer, and from two "lumps." These were filled and hove down at low water, and pumped out during the operations as the tide rose. (See Plate 2.) Air was pumped in by the destroyer *Handy,* and the water in the upper compartment of the vessel thus forced down to the level marked X on Plate 1, materially assisted.

All being in readiness, on the 18th January the

EXPLANATORY SKETCH OF THE OPERATIONS IN RIGHTING THE DREDGER "CANTON RIVER" BY H.M.S. "TERRIBLE"

PLATE 1.

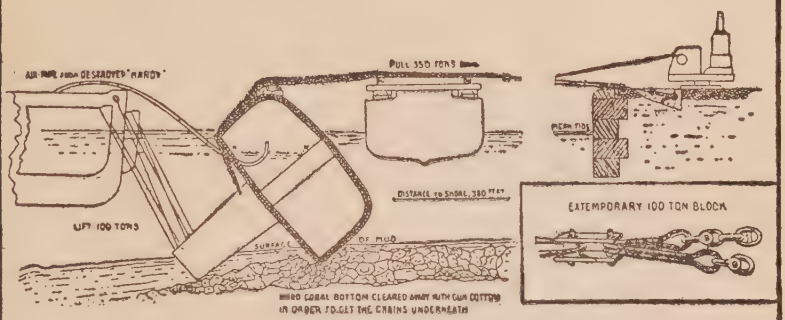


PLATE 2.

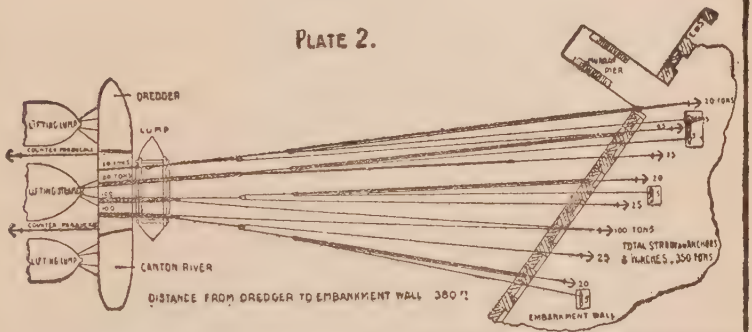
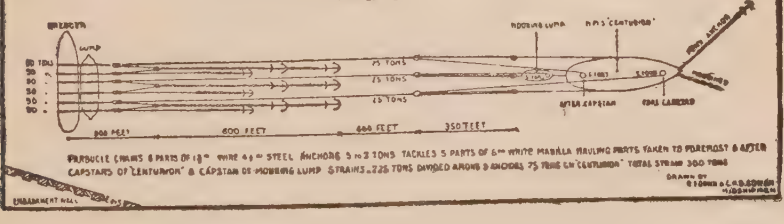


PLATE 3.



PENNANT CHAINS 6 PARTS OF 18" WIRE 4½" STEEL ANCHORS 5 TO 2 TONS TACKLES 5 PARTS OF 6" WHITE MANILLA HAULING PARTS TAKEN TO FOREPOST & AFTER CAPSTANS OF "TERRIBLE" & CAPSTAN OF ROWING LUMP STRAINS = 225 TONS DIVIDED AMONG 5 ANCHORS 75 TONS ON "TERRIBLE" TOTAL STRAIN 350 TONS

winches were hove round and the vessel turned over without a hitch.

When a purchase became "two blocks" a carpenter's stopper was put on to take the strain, and the block shifted. These stoppers were invaluable, and in future I had no hesitation in trusting the heaviest strains to them. In the righted position the vessel's upper deck was 9 feet below high water, and an examination of it by divers disclosed considerable damage. The bulwarks being crushed in had opened the deck where it joined the side, and several iron stays were forced through. The leaks were mended, coffer dams, raised above high water, placed round each hatchway, and by the 1st March she was ready for pumping up.

Four pumps were started (12-in., 9-in., 8-in., and 6-in.); the vessel, lightened, was turned round at right angles to the sea-wall, and dragged into shallower water. (See Plate 3.)

On the 2nd pumping was resumed, the idea being to drag her along the bottom into still shallower water. The stern purchase was hauled taut, the vessel rose slightly, and there was every appearance of her coming in, when, unfortunately, a bad leak developed on the port side which the pump failed to keep under. This caused an excess of buoyancy on the starboard side, giving the vessel a list; the great amount of top weight then came into play, and she turned over.

On the 11th March operations were started to turn her back again. Nine anchors were laid out in a line at right angles to her keel, and three parbuckle tackles of 100 tons each were rigged from them to six chains passed round the dredger. The hauling parts of two of the tackles were taken to the *Centurion's* foremost and after capstans; the third was taken to the capstan of the moorings lump, which was secured to the *Centurion's* stern.

The total strain on the *Centurion's* moorings was 75 tons. To assist, her port bower anchor was laid out.

On the capstans being hove round the vessel was turned to an upright position without any difficulty. For a plan of the arrangement of tackles reference should be made to Plate 3.

It was while stationed at Hong Kong that, early in 1901, I had the pleasure of meeting Lieutenant (afterwards Admiral) Wm. S. Sims, U. S. Navy, at that time serving on board the battleship *Kentucky*. He was a gunnery enthusiast and was trying to impress upon his Naval authorities the necessity of a reform in heavy-gun shooting. He based his arguments upon a comparison of the very bad shooting of the American Fleet at that time and the records made by H.M.S. *Terrible* in China in 1900 and 1901, pointing out that the fundamental defect in training was that American scores were based upon observation of the splashes of projectiles, while British scores were a record of actual holes made in a canvas target.

It is not inappropriate to my own reminiscences to recall the part which Admiral Sims, as he afterwards became, took in reforming the gunnery of the United States Navy. Though then a junior officer, he felt impelled to report to the Navy Department at Washington on the unsatisfactory methods of training men in gunnery. He little anticipated the opposition which would be offered to his suggestions and the annoyance which would be occasioned by his criticisms. He began his campaign in a moderate spirit as befitted a junior officer addressing his seniors, observing all the ordinary regulations in bringing his views to the attention of the authorities. His memoranda reached Washington and were acknowledged, but he got little more satisfaction out of it than that. He wrote again and again, and

at length the Naval authorities at Washington did not even take the trouble to acknowledge his communications. At last, this young naval lieutenant became desperate. He sat down in his cabin and prepared a report on the state of gunnery in the United States Fleet and mailed it in duplicate, sending one copy to President Roosevelt at White House, who since the time when he had acted as Assistant Naval Secretary had taken a great interest in everything connected with the Fleet. I forget at the moment to whom he sent the other copy. It was, of course, a gross act of insubordination for a junior officer to address the President, who was technically the Commander-in-Chief of the whole Fleet, ignoring the American Admiral on the station and all the senior officers at Washington. But Lieut. Sims accepted the risk. By some good chance the letter to Mr. Roosevelt actually reached his own hands. He sat down to study this young officer's letter. He was rather shocked by his criticisms of existing methods, but equally impressed by his suggestions for reform. So he forthwith sent a communication to the Navy Department stating that this young man was to be immediately sent for, given an opportunity of proving his contentions, and then, if he failed, it was significantly added, the senior officers in the department could do with him what they liked without consulting the President.

So in due course an order reached Lieut. Sims, directing him to return to Washington. When he got there he found that, though the President had shown that he was concerned in the matter, he had not by any means rendered the path of Lieut. Sims smooth and comfortable; on the contrary, quite a lot of people in influential positions were prepared to put obstacles in the way of this upstart, as they regarded him. Lieut. Sims worked on for some time, and then he saw that he could make little

headway. Fortunately, one of the Admirals serving in the department was impressed by his knowledge, energy, and courage. He went to White House and represented the position of affairs to the President. The result was that Lieut. Sims was forthwith appointed Naval Aide-de-Camp to the President, which gave him freedom of access to Mr. Roosevelt and insured his support.

In this way the traditional conservatism of many older naval officers of the United States Navy was broken down. At length, this daring lieutenant was not only promoted, but a new office was created for him, and he became Director of Target Practice. Before he relinquished that appointment, the gunnery of the United States Navy had been reformed, and he had become one of the outstanding officers of the Fleet.

Some years later Captain Sims was in England, and committed another indiscretion. In a speech at a public dinner, given by the Lord Mayor at the Mansion House, he said that if England was ever menaced by a foreign power, "You may count upon every ship, every man, every dollar, and every drop of blood of your kindred across the sea." As American naval officers are not allowed to express in public opinions as to their country's policy, Captain Sims was admonished; but when the United States decided to intervene in the Great War, and Mr. Wilson had to select an officer to command the American naval forces in European waters, his choice fell upon this "upstart" of earlier years, who was thus able to show once more that "blood is thicker than water."

In this connection I may quote a letter I received from an American officer giving an account of the progress of reform: "With regard to our target practice, a new billet has been created. The Chief of the Bureau of Navigation considered that one man ought to be respon-

sible for the shooting of the Fleet, and selected Sims. His position is a peculiar one. Nominally he is on special duty acting under the Chief of the Bureau of Navigation, but really he is the chief adviser on all gunnery matters. Theoretically he has no authority, practically he has a lot, because the chief does not fool around with what is on file, but acts on his suggestions in the full belief that he has studied the matter, and thereby can arrive at more correct conclusions than those who have only considered these matters incidentally. Lieutenant Sims centralised the whole system of the training of gun pointers, and made prize firing squarely competitive, so that all ships might be graded on a basis of their rapidity of hitting. The very first practice under his system convinced the authorities that he was right and that much of the gun gear was all wrong."

The United States Navy made wonderful strides in perfecting their shooting and quickly went ahead of us, while we, for our part, were strenuously resisting the competition the Americans believed in. In the words of Lieutenant Sims himself, "Competition is the chief incentive to do well. To do well you must have good men and sound gear. Competition will not only improve our men, but it will force the authorities to bring our fighting machines up to date."

Lieutenant Sims held the position of Director of Target Practice until February, 1909. Eventually, as I have said, he became Aide to President Roosevelt, in addition to his other duties, and subsequently he was appointed, by order of the President, to the command of the battleship *Minnesota,* being the only man of his rank to have such a command. Upon the completion of his two-year term of sea service, he was ordered to the Naval War College, at Newport, from which he graduated two years later and received the command of the Atlantic

Torpedo Flotilla. During his administration of this latter command, the efficiency of the torpedoes and guns of the destroyers was, I am told, very considerably increased. He was singled out for special service by President Roosevelt, and when the United States entered the War in April, 1917, a guarantee of effective co-operation between the British and American Fleets was supplied by President Wilson's appointment of Rear-Admiral Sims—for he had reached that rank—in command of the United States forces sent to British waters.

From this digression I return to the subject of gunnery on the China Station. Early in 1901 Sir Edward Seymour,[1] the Commander-in-Chief, discussed with me the extraordinary results obtained by H.M.S. *Terrible* in her prize firing of 1900, and ordered me to preside over a committee to draw up suggestions for improving the regulations for prize firing in H.M.'s Fleet. I was to be assisted by Captain John Jellicoe, Captain Sir George Warrender, two Commanders, and ten Gunnery Lieutenants. Every detail was gone into most carefully, and a concise set of regulations were drawn up. The Commander-in-Chief approved of these, and they were adopted forthwith for use on the China Station.

A copy of the committee's report was sent to their Lordships the Commissioners of the Admiralty, but they did nothing. I heard that they would not accept the proposed reforms, and discountenanced the modification of the target. Furthermore, they highly disapproved of placing the ships in order of merit in the annual return, instead of alphabetically. In short, they were quite satisfied with everything as it was, and strongly objected to encouraging emulation.

The report, of course, *never* got to the Lords of the Admiralty. They did not trouble their heads about gun-

[1] Afterwards Admiral of the Fleet Sir Edward Seymour. O.M.

nery suggestions coming right away from China Seas. The report went to a very junior lieutenant of H.M.S. *Excellent,* the gunnery establishment at Portsmouth. A good many people in the Service, I believe, regarded the results which we obtained in the *Scylla* and *Terrible* successively with not a little suspicion. I dare say that this young officer, familiar with the ordinary shooting of His Majesty's ships in those days, could not believe that it was possible for any ship with proper instruments and decent training to do as well as we had done. So he turned the report down, deciding there was nothing in it of importance.

It may seem strange to readers who are unfamiliar with Admiralty methods that a very junior lieutenant should have been in a position to turn down important recommendations of a very strong committee of officers, one of whom was afterwards to become Commander-in-Chief of the Grand Fleet and responsible for the safety of the whole Empire and the success of the Allied cause. These officers who formed the committee possessed a wide experience of gunnery, and had proved by results that the methods they proposed had greatly increased the fighting efficiency of the ships which had adopted them. This incident furnished an illustration of bad administration. A junior officer was able to hold back the whole movement of gunnery progress, and thus placed the Royal Navy at a disadvantage if war had come before there was time to remedy the mistake.[1]

Sir Edward Seymour's decision was not affected by the disapproval of his proposals. The committee's reforms and rules were brought into use, and the shooting of the Fleet in China went ahead enormously—a fact which later on extracted an official acknowledgment.

[1] The Committee's proposals were subsequently adopted in 1905 by the Admiralty of which Lord Fisher was First Sea Lord.

In order further to encourage quick hitting on the China Station, Sir Edward Seymour presented a shield which was to go to the ship on his station making the highest score in prize firing. This, of course, the Admiralty could not stop. In his determination to encourage emulation Sir Edward Seymour went further. He issued an order that the ship making the highest scores in prize firing was to take the right of the line at all parades on shore or whenever a brigade was landed. This the Admiralty promptly countermanded by a curt telegram, which I saw. On a later occasion a question on the subject was asked in the House of Commons. The Admiralty's reply was, to say the least of it, strange. I leave the record of question and answer to speak for itself.

"Gunnery in the Navy.

"Mr. Harmsworth asked the Financial Secretary to the Admiralty whether the Admiralty had countermanded Admiral Sir E. H. Seymour's order when the Commander-in-Chief in China, to the effect that the ship holding the Seymour Challenge Cup for good shooting would always take the right of the line at all parades on shore or whenever a brigade was landed.

"Mr. Arnold Forster said the Admiralty had given no orders with respect to this question, which was one entirely within the discretion of the Commander-in-Chief on the station."

I found a great many officers were sceptical as to whether the *Terrible* had really made in 1900 nearly 77 per cent. of hits;[1] it appeared to them impossible. To obviate a recurrence of this doubt, I took out in the ship seventeen independent umpires for the 1901 firing, among

[1] Seven years after this the average of the Fleet was 79 per cent.

them being Captain Jellicoe, Captain Sir George Warrender, and Captain Windham.

The firing was not as good as I anticipated it would be, as we had some miss-fires due to bad ammunition, but the men were delighted to find that they had equalled the *Scylla* and were again first ship of the whole Navy. The twenty-four men competing fired, in twenty-four minutes, 128 rounds and made 102 hits, which is 80 per cent. The use of the loading teacher, which I have mentioned, had increased the rate of fire from 4.3 in 1900 to 5.3 in 1901. One man, named Grounds, actually fired eight times in a minute and made eight hits. Such a feat of shooting was then unprecedented.

Captain Sir George Warrender, of the *Barfleur,* adopted the method of teaching employed in the *Terrible,* and after a month's training carried out prize firing. The result was conclusive. The ten guns on the *Barfleur* fired 159 rounds and made 114 hits; the year before their record was 111 rounds and 47 hits. They had therefore nearly doubled their fighting efficiency.

Apropos of this, Sir George Warrender told me rather an amusing story. Being anxious to encourage his men to beat the *Terrible,* he promised to pay two dollars to every man who made over a certain number. The 114 hits rather astonished and delighted him; he had to pay £20. When the payment was being made, one man, in gathering up about £2, looked very glum. To an inquiry if he did not like it, he replied with an indifferent air, that he did not mind it. What, asked Sir George, was the matter? "Well," said the man, "it is the way you very kindly give us 4*s.* a hit; we would have given *you* £1 a hit to have beaten the *Terrible.*" This trifling incident revealed in a flash what was wanted; but the Admiralty were blind to revelations.

I was within signalling distance of the *Barfleur* when she carried out the firing. At the conclusion of it Sir George made the following very pleasant signal to me: "We have done splendidly—159 rounds, 114 hits. This is nearly three times our score of last year. We owe our success to your instruction, and thank you."

In reporting to the Admiralty the great improvement in the *Barfleur's* shooting, Admiral Sir Cyprian Bridge, who had become Commander-in-Chief of the China Station, wrote—

> "This shows that the advantages of Captain Scott's system are not confined to his own ship, but are making themselves felt in other ships of the squadron.
>
> "I have carefully examined the system at work, and have been much impressed by its efficacy. It is based on recognition of certain fundamental characteristics of human nature. It allows for excitability and moments of 'exaltation' in men loading, aiming, and firing; and goes a long way towards neutralising both, by making provision for an immediate sedative. In my opinion it is, in the highest sense of the term, scientific. Therefore it is widely different from ordinary systems of training men to shoot, which consist essentially of mere repetitions sure to degenerate, in time, into formalism. Captain Scott's system is devised to put drill in its proper place; to make it an assistant in attaining efficiency, not a master whose predominance renders the attainment of efficiency impossible. I trust their Lordships will *prohibit attempts to spoil it on the plea of improving it.*
>
> "Cyprian A. G. Bridge,
> "Vice-Admiral."

Their Lordships did not take Sir Cyprian's advice; they tried to improve it and spoilt it.

In November, 1901, the Commissioners of the Ad-

miralty wrote directing me to report fully upon the nature of the arrangements invented by me and stated to have improved the shooting of H.M.S. *Terrible* and *Barfleur*.

I reported fully, but the only action taken by their Lordships was to issue an order which entirely spoiled the shooting of the Fleet with the smaller class of guns. In the *Terrible* the Commander, Commander F. C. Ogilvy, and two Lieutenants, Lieutenants R. Hutchinson and G. P. England, had taken infinite pains in training the crews of the 12-pounder, 6-pounder, and Maxim guns. Telescope sights had been fitted to them, and other arrangements had been brought into use which I was anticipating would greatly increase their rapidity of fire. The telescope sight on the Maxim gun we found doubled its efficiency.

This training was entirely thrown away, for under the Admiralty orders referred to the target was at such a distance that the men could not see whether they were hitting or missing. In these circumstances skill was eliminated; all the gunners could do was to fire as fast as possible and trust to luck.[1]

I may conclude this chapter with some observations on firing at long range. The South African War had taught us that our guns on shore could make good practice up to 16,000 yards, and that from an elevated position we could spot the fall of shot at that range. On board ship we had never fired a gun at more than 1600 yards, which is very little over the range used in the time of Nelson. We knew that if we went into action we must fight a long way outside this range to avoid the risk of being sunk by a torpedo. We knew that, whether

[1] This fatal error was not put right till March, 1905, when I became Inspector of Target Practice.

firing across a room with a saloon-pistol or firing a 12-inch gun at 16,000 yards, there is only one way to hit the mark; that is to spot where your last shot or broadside has gone and then alter your aim accordingly. We could not do this as we had then, in 1902, no electrical contrivance aloft (where the spotter must be in long-range firing) for conveying to the guns the range of the enemy, although I had devised and used such a machine in H.M.S. *Inconstant,* twenty years prior to this date.

All we had in 1902 was a voice-pipe, which was, of course, useless when the guns were firing. Consequent on this state of affairs, we could only train our men in individual firing at a range short enough for them to see whether they were hitting the target or not, and they never fired a shot at the range they would have had to use in action.

In 1901, Admiral Sir John Fisher attempted long-range firing in the Mediterranean. His idea was really to demonstrate to the Admiralty that long-range firing could not be successfully carried out without the necessary implements, and so force the Admiralty into supplying the instruments. His intention was undoubtedly patriotic, but as it so happened it was very bad for the country.

The Admiralty seized on it at once, and, through Parliament, announced that successful firing had been carried out at 6000 to 7000 yards, and that orders had been issued that all fleets and squadrons were in future to carry out their firings at these or even longer ranges. This reply was good enough for the House of Commons, and enabled the Admiralty to continue jeopardising the country, by not supplying instruments which were necessary to enable the Navy to fight at the ranges they would have to use in war-time.

An Admiral, writing to me on the subject, asked me,

since the Admiralty had issued no instructions as to how the long-range firing was to be carried out, to make a suggestion. I replied that the Admiralty had not given any instructions because they knew they could not be carried out without the necessary instruments, and these they did not want to supply. I advised him to inquire of the Admiralty how, without the necessary instruments, he was to carry out the long-range firing. This, I added, would corner the Admiralty, and force them to do something. The gallant Admiral did not approve of cornering the Admiralty; he pointed out to me that it was the duty of every Naval officer to do as he was told, and make the best use of the appliances that were supplied to him. This was undoubtedly a very proper reply, but if I had abided by such a sentiment, the gunnery of the Navy would never have improved.

About a year afterwards, as Inspector of Target Practice, I was on board this gallant and very proper Admiral's ship during her battle practice. The bugle sounded the "commence firing" and after the allotted time the "cease firing." The ship then closed on the target to count the hits. *There were none.*

I dined with the very proper Admiral that night and we discussed the shooting. He admitted that his ship's bad shooting was due to the Admiralty, but argued that they were not to blame because their money was controlled by politicians who did not consider the welfare of the nation, but only whether any proposal would tend to keep them in office or not. Under these conditions he did not agree with the five years' attack that I admitted having made on the Admiralty. I replied that possibly to some extent the politicians were to blame, but that as I could not attack them, my only course was to "go for" the Admiralty. I think in the end he agreed

with me, for I saw afterwards a very strong letter from his pen pointing out that long-range firing could be no more carried out without the necessary instruments than one could make bricks without straw.

CHAPTER X

WEI-HAI-WEI AND THE CRUISE HOME

Wei-hai-wei Controversy—Naval Base or Seaside Resort?—Wei-hai-wei's Useless Forts—A Report to the Admiralty—Further Work stopped—Final Prize Firing—Petty Officer Grounds' Record—The Homeward Voyage—A Congratulatory Address—Reception at Portsmouth—Visit to Balmoral—The King's Deer Drive—How I shot a Hind—His Majesty's Interest in Naval Gunnery.

In August, 1901, we visited Shen-Hai-Quon, a Tartar city very like Peking, situated at the end of the Great Wall of China. Just opposite to where we anchored the Great Wall had been pierced to allow the railway to pass through it, and a lot of the huge bricks were lying about. A midshipman brought one of these on board. I asked him what he was going to do with it; he said that when he had money enough to build a house he would use it as the corner-stone.

From here we went on to Japan and visited most of the principal ports. At Tokyo we were most handsomely entertained by the Japanese Admiralty, and I met Admiral Shimura, a Japanese officer who had been in the *Duke of Edinburgh* with me, and whose brilliant services in the Chino-Japanese War of 1894 had won him a distinguished position. *En route* south we called at Wei-hai-wei, and Dr. Morrison, then correspondent of the *Times,* and now Political Adviser to the Chinese Government, stayed with me for a couple of days. What a wonderful man he is!

Wei-hai-wei, which lies very near Port Arthur, has been the subject of many discussions, and owing to the

vacillation of opinion an enormous amount of British money has been wasted on it. It was a very strongly fortified Chinese naval station, and was captured by the Japanese from China in 1895, Port Arthur falling into their hands the same year.

Why the Japanese were not allowed to keep the two fortresses which they had so gallantly fought for and won, I do not know, but the circumstances in which they were forced to evacuate them are well known. Wei-hai-wei came into Great Britain's possession in 1898, and the question arose as to what we were to do with it. The *Terrible* was at Wei-hai-wei from June until September, 1900, so I had ample opportunities of gauging its possibilities. It had been in our possession for two years, but the authorities had not decided what use they should put it to.

With the Russians only 100 miles away at Port Arthur, the Germans very near at Kiao-chau and the Japanese not very far off with a powerful fleet, it was obvious that unless we made it very strong it would be no use to us. This meant fortifying it, and fortifying the mainland opposite to it. Hence this idea was out of the question, and there appeared to be no other course open but to leave it as it was and use it as a training station for the British ships on the China Station, for which purpose it was admirably situated, as there were facilities for carrying out all the practices and exercises necessary to prepare a man-of-war for battle. I discussed the matter with Captain (afterwards Viscount) Jellicoe, Sir Edward Seymour's Chief of Staff, who had come down among the wounded from Taku, and he held the same view. Sir Frank Swettenham was also of this opinion, but added that the portion of the mainland which had been conceded to us should be used as a sea-

side resort for the Europeans of North China. Another suggestion was to build forts on the island, but to have no dockyard and no breakwaters, and no forts on the mainland. It was obvious to any one with a grain of common sense that this scheme could not possibly be accepted. Why fortify an island if you had nothing on it for the forts to protect? Why build forts which could be shelled from the mainland, and why build forts to protect a harbour which in war-time would not have been safe to anchor in?

An officer remarked to me that the suggestion was so ridiculous and so impossible that he believed H.M. Government would adopt it. I felt constrained to reprove this implicit disbelief in official intelligence, but he proved to be right.

On my revisiting Wei-hai-wei at the end of 1901, I found that three forts had been almost completed at a cost of about a quarter of a million of money, and that much more was to be spent in transforming the island into a military station. The waste of money appeared to me so wicked that I wrote officially to my gallant Commander-in-Chief at that time, Sir Cyprian Bridge, pointing out that the forts would be of no use when they were finished, and suggesting that he should ask the Admiralty to have any further work stopped.

This letter, I think, went into the waste-paper basket, but fortunately for the British tax-payers, I sent a copy of it privately to the Second Sea Lord of the Admiralty, who replied to me that my letter made the matter so clear that he had laid it before the Board, and that they had advised the Government to stop further work on the fortifications and to withdraw the troops.

Shortly afterwards, we received a telegram at Wei-hai-wei to stop further work on the forts. When this

order arrived, the forts were completed with the exception of putting the guns into them. In that state they remain as monuments of indecision and vacillation of opinion.

In both Houses of Parliament questions were asked respecting the production of reports and documents showing the grounds of the Government's decision to abandon the work of fortification. In the House of Lords the Earl of Selborne replied that the papers were confidential and would not be produced. Viscount Goschen pointed out that H.M. Government had come to the conclusion, evidently on fresh information acquired, that the first opinions as to the value of Wei-hai-wei as a naval and military base could not be sustained. Lord Rosebery pointed out that four years before the whole country had rung with praises of Wei-hai-wei and its future value. It was to be a place of arms, a naval station, a coaling station; but now that £270,000 had been spent on the forts and they were nearly completed, the Government had suddenly discovered that Wei-hai-wei was unsuited for the purposes for which it had been so loudly proclaimed, that it was only of value as a holiday resort, and that the troops would be withdrawn from it and the forts left unfinished.

In the House of Commons, on the 10th February, 1902, Mr. Arnold Forster stated that the decision to discontinue the fortifications was arrived at on purely strategic grounds, and was not the result of any special report, and that there were no documents to show, a statement at which Mr. Bryce expressed a natural surprise.

In May, 1902, our third and last prize firing took place. For two years we had been the best ship in the Navy, but this time we had to come down a little owing

to very peculiar circumstances. The firing took place at Mers Bay, a short distance from Hong Kong, the weather was very bad, the men could only with great difficulty work on the targets, and most of our boats were stove in. It was not a day when any other ship would have fired, but I had such confidence in the gun layers that I wished them to show that they could do as well in rough weather as in fine. We commenced firing. One gun layer, William Bate, a superb shot, who for the last two years had never missed the target, scored nothing—all misses a long way over. Two or three men who fired after him got very few hits. Feeling sure that there was something wrong with the cordite, I stopped the firing, and had pressure gauges put in, with the result that we discovered we were getting a ton more pressure than we ought to have, and consequently an abnormal velocity which sent all the shots over. The gun sights were readjusted, and the remaining twelve men who fired made 88.2 per cent. of hits. I subsequently discovered that my energetic torpedo lieutenant had been up all night testing the primers in the cartridges. The tests had been carried out in the ammunition passage which, as we were under steam and in the tropics, was at a temperature of at least 125° C. The fact that the cordite was exposed to this temperature for the night, of course accounted for the condition which we found in the morning.

Petty Officer Grounds did not fire until after I had ordered a readjustment of the sights. He maintained his position as best shot in the ship by firing in one minute nine rounds and making seven hits.

Two months after the prize firing, Grounds, who had for three years been the best shot in the whole of the British Navy, died suddenly from cholera. This petty officer had established a record which practically revo-

lutionised our naval gunnery and I regarded him as a man worth more than his weight in gold.

On the 26th June, 1902, we were at Hong Kong, and every one was anxious to do something to commemorate the Coronation of King Edward VII. I remembered having written *Scylla* in human letters on the rocks at Candia, and decided to write "God save the King" on the *Terrible's* side in the same way. The fourteen letters took about two hundred and fifty men.

In July, 1902, we received orders to proceed to England, and on the 29th we steamed out of Hong Kong. We touched at Singapore, Aden, Suez, Port Said, Malta and Gibraltar, arriving at Portsmouth on the 18th September. As we had left Portsmouth on the 19th September, 1899, we had been away for almost exactly three years.

The Navy League sent me an address and the Council of the Society of St. George a telegram, both of which are reproduced below.

"To Captain Percy M. Scott, R.N., C.B., H.M.S. 'Terrible.'

"Sir,

"The Executive Committee of the Navy League, on behalf of the members of this Society, would beg to tender to you, the officers and crew of His Majesty's Ship *Terrible,* their most cordial congratulations upon your safe return to this country.

"As citizens and taxpayers, we take this opportunity of conveying our thanks for the great services by sea and land which you and your ship's company have rendered to the Empire, and we would refer especially to the signal service performed by you in mounting heavy guns for use before Ladysmith and in the field, as also the improvement in gunnery prac-

tice of the Navy, which has largely been the result of the record firing by His Majesty's Ship *Terrible.*

"We have the honour to be, Sir,
"Your obedient servants,
"R. YERBURGH, President.
"E. R. FREMANTLE, Vice-President.
"M. S. TROWER, Chairman of the Executive Committee.
"WM. CAIUS CRUTCHLEY, Secretary."

"The Council and Members of the Society of St. George offer a very hearty welcome to Captain Percy Scott and the officers and men of the *Terrible* upon their return to the shores of Old England. They have proved that they did not forget (nor ever will) the imperishable signal of heroic Nelson, 'England expects every man will do his duty.' "

On the 23rd the citizens of Portsmouth entertained us at a public banquet. The Mayor,[1] in proposing the toast of "Our Guests," referred to various incidents that had happened during the commission, concluding his speech as follows:—

"On behalf of my fellow-townsmen, I would say to you, the officers, petty officers, and men of the *Terrible,* we feel that in tendering you our tribute of respect and esteem and our expression of heartful thanks, we are only acting as the mouthpiece of the nation at large. You have earned our deepest gratitude, and maintained nobly and well the grand traditions of our first line of defence."

In reply I said:—

"On behalf of the officers and men of the *Terrible,* I beg to thank you very much for the magnificent re-

[1] Major (afterwards Col. Sir) William Dupree.

ception that the inhabitants of Portsmouth have given us, and for the kind manner in which you have proposed the toast. The borough of Portsmouth has been for so many years and is so closely connected with His Majesty's Navy, that a welcome from its citizens naturally finds full appreciation in the hearts of a ship's company, most of whom have residing in the neighbourhood all that is dear to them. I need hardly tell you how anxiously the order for our return was looked forward to, how eagerly all the home papers were scanned for some indication of our relief being commissioned, and how easily any rumours, no matter how unreliable the authority, were seized upon and believed, and it would be impossible for me to make you realise how hearty was the cheer which rang through the ship when I passed word that orders had been received for our return to Portsmouth. Much as we looked forward to our return, your welcome has entirely outdone anything that was dreamt of, and your reception of us will, I am sure, never be forgotten by any officer or man of the *Terrible*.

"With regard to the South African War, even before it commenced I realised that it was purely a soldiers' war. The Boers had no navy to fight, no seaports for us to secure, no commerce for us to attack, and the theatre of fighting was too far inland for a naval brigade to go. The small number of infantry that we could land would be inappreciable, and the only field service guns that we had to land were of the same pattern as the Royal Artillery. It, therefore, appeared obvious that it was a war in which the Navy could take but a small part. A lucky chance, however, arose. The Boers had got long-range mobile guns, and our Army had not. This ill-wind blew good to us. It was an easy matter to get a few Cape waggon wheels, put a bit of wood on the top of them, and on to that ship long-range 12-pounders; then one had a gun equal in range to those employed by the Boers. When heavier guns, such as 4.7-inch and 6-inch, were required, it only meant a little more wood and stronger wheels. These guns were found rather

useful, and allowed the Navy to work once more beside the sister Service in the field. The manufacture of gun-mountings, however, was not a very happy or fortunate event for me personally, as it meant my being left at the base to make more, and so precluded me from commanding my own officers and men. However, they were fortunate enough to be commanded by Captain Jones, the present Flag Captain here, an officer who, by his capability, tact, and the cordial friendship which he extended to the 'Terribles' made it a pleasure to work under him, and I was glad to hear from him that they had done well. You mention, Mr. Mayor, the services performed by Commander Ogilvy, Mr. Wright, and their guns' crews at the first battle of Colenso. The saving of two 12-pounders by them on that occasion was a feat which all of us in the *Terrible* have been very proud of. When the native drivers had all bolted and the bullocks had all been shot, getting a couple of guns away was not an easy matter.

"I am extremely obliged to you, Mr. Mayor, for the kind way in which you have referred to my services as Commandant of Durban. Some of the duties I had to perform there in restricting civil rights would have been very irksome had I not been in such a loyal colony as Natal, where the aim and object of every one was to help, and I am glad to see that the valuable services rendered by Sir David Hunter and Major Bousfield have been recognised by the country. In North China, the officers and men again had an opportunity of working ashore with the sister Service, and eventually found themselves quartered in the forbidden city of Peking, and I am very glad to see that one man who was shot through the brain there is well enough to enjoy your hospitality to-night. I have to thank you also for the very kind reference which you have made to the shooting of the ship. I feel sure that the captains of the guns and the officers who have taken such care and trouble over their instruction will fully appreciate your remarks and, further, that your public reference to it on this occasion will

do much to stimulate a desire in others to follow their example. As Captain of the *Terrible,* it has always been a great satisfaction to me to know that, if we had to fight an enemy, I could go into action with a perfect reliance on the men behind the gun. I beg, again, in the name of the officers and men to thank you and the citizens of Portsmouth for this magnificent reception, and to assure you that it is fully appreciated by us all, and at the same time to add that on board the *Terrible* we all appreciate our luck in coming in for two campaigns, but we all know that we have done no better than any other of His Majesty's ships would have done under similar circumstances. If in any little details the *Terrible* has been successful, I owe it all to the loyal co-operation of my officers and men."

On the 1st October, by royal command, I visited the King at Balmoral. On arrival His Majesty invested me with the insignia of Commander of the Bath and Commander of the Victorian Order, and presented me with a miniature of the Commander of the Bath in order that I might wear it at dinner. His Majesty informed me that I should go with him the next day to a deer drive at Invercauld. The next day, in driving over, His Majesty, noticing that I was wearing a white shirt and collar, told me that as soon as the drive commenced I must cover them up as the deer had a very quick eye for any spot of white.

The forest round Invercauld is an ideal country for deer, having plenty of cover and, at the same time, good open spaces. It was then let for the shooting to Mr. Neumann. There were five rifles, the King, Earl Howe, Sir John Willoughby, Captain Gordon Wilson and myself. We were placed in capital positions, and had not long to wait before the deer came in sight. One group

looked as if they were coming towards me, but they turned towards His Majesty, who brought the stag down with a fine shot. Sir John Willoughby and Captain Gordon Wilson also got a stag each.

In driving back to Balmoral His Majesty said that as I had not got a stag he would send me out the next morning stalking. I had an early breakfast, and was driven out to the high ground near Balmoral. *En route* I tried my rifle, which was a new one. I paced out ninety yards, pinned an envelope on a tree and fired at it. The bullet struck almost in the centre, and the cautious gillie said this "would do." We saw a good many deer, but they were difficult to get at. After a very long crawl we came on a fine stag; he was about eighty yards off and facing me. I fired at the centre of his chest, whereupon he turned to the right and walked away. In horror I exclaimed that I had missed. "Oh no," said the gillie in very broad Scotch, "you hit him through the heart." We found him quite dead about five yards from where he was when I fired. The gillie informed me that stags when shot through the heart often behave in this eccentric manner.

We started off on another stalk and I got my second stag, a very bad one with one horn broken. It was an easy shot as he ran by me at about forty yards. We then made a long detour round a hill, and with a telescope could see a herd of about twenty hinds with one fine stag. The wind was favourable for us, and we got up to within about seventy yards of them. The stag was standing quite still and broadside on to me—it was an easy shot. I fired at his shoulder, and to my chagrin he went off unhurt. "I've missed him," I exclaimed to the gillie. "The hind took it," he replied. The fact is that at the moment of firing the hind had run up in front of the

stag and the bullet struck her spine instead of entering the shoulder of the stag.

On my return to Balmoral the King congratulated me on getting three heads. On my apologising for having shot a hind, His Majesty explained that at this season of the year the old stags were lazy and unappreciative of danger, and that the hinds had to urge them on. For a hind to get the bullet instead of the stag was not an infrequent occurrence, as in looking over the sight of a rifle you could not see what was below the point you were aiming at. This explanation was a great relief to me, as I thought I had committed a grave offence in shooting a hind.

The next morning I had a long interview with His Majesty with reference to gunnery results of H.M. Ships *Scylla* and *Terrible*. I explained that the gunnery of the whole Fleet was in a deplorable condition, and that the principal reasons for it were the inefficiency of our gun sights, the lack of interest taken in gunnery generally, and the absence of competition. I told the story of Sir George Warrender and his men, and His Majesty remarked that every one knew that Englishmen would do nothing without competition.

I went on to explain that the desire of the Admiralty to keep the results secret was only because the results were so bad, but that emulation and competition could be attained by preparing two returns—one confidential, giving the actual number of rounds fired and hits made; the other a public return showing the ships in order of merit on a system of points. As a result of the conversation His Majesty said that he would have a letter written to the First Lord of the Admiralty (Lord Selborne) suggesting the introduction of these two returns.

On the evening of the 4th I left Balmoral. The *Terrible* was rapidly dismantled, and on the 24th October was paid off. *Punch* published a cartoon on the subject.

CHAPTER XI

GUNNERY MUDDLE

Efforts towards Reform—Admiralty Obstruction—Waste of Ammunition—Official Reprimands—Two Gunnery Committees appointed—Conflicting Reports—The *Centurion's* Gun Sights—A Tardy Discovery—The Dawn of a New Era.

On the 1st April, 1903, I was appointed Captain of H.M.S. *Excellent,* the School of Gunnery, and it was quickly brought home to me what a flood of opposition I should have against me if I attempted to improve the shooting of the Fleet. The officers of the *Excellent* were at first a little loth to believe that all they had been doing was wrong, but their ideas soon changed, and then they co-operated most loyally and heartily with me.

In a very short time we modernised the instruction given to officers and men. All the instructional machines that had proved so useful in China were brought into use, and the qualifications of the men as shots were decided on the number of hits made on a target.

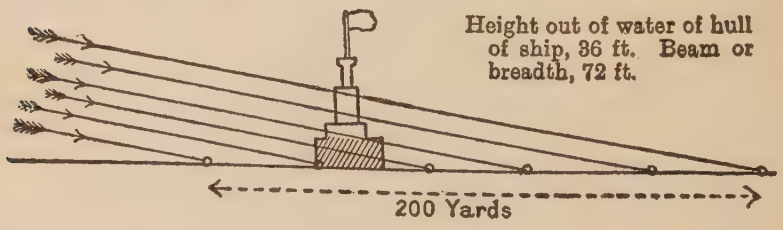
At this time, although the Fleet had not the necessary instruments for the purpose,[1] long-range firing was being carried out. As to how it was to be done no instruction had been issued, and the Commanders-in-Chief were therefore left to carry it out in any way that seemed fit to them. The Commanders-in-Chief on various stations held very diverse opinions on the method to be employed, and some strange battle practices resulted. In some cases the ammunition might just as well have been thrown overboard.

[1] Cf. Chapter IX.

In order to help matters, I made some proposals to the Admiralty in December, 1903, and suggested that H.M.S. *Drake,* then commanded by Captain John Jellicoe, should be placed at my disposal to carry out certain experiments which were necessary before putting forward a complete scheme of practising for battle at what was then considered to be long range.

I asked for H.M.S. *Drake* because I considered that Captain Jellicoe [1] was at that time conspicuous for his knowledge of gunnery among the captains of the Fleet.

My scheme was exceedingly simple, it consisted of firing broadsides. In a former chapter I have pointed



out that in the short-range practice it was no use men firing unless they could see whether their shot had hit or missed. This, of course, could not apply to long-range firing, for it would be impossible to see a hit either on a target or an enemy at four to five miles. In an action you might get an indication that you were hitting by the enemy kindly going down, blowing up, or catching fire, but you could not make a target which would perform these functions, so some new method had to be devised from which an assumption could be formed as to whether the target was being hit or not. To meet the case I suggested that broadsides should be fired, for the following reason. When a volley, or broadside, say of six guns, is fired, the shots do not all go in the same place,

[1] Afterwards Admiral of the Fleet Viscount Jellicoe of Scapa, O.M.

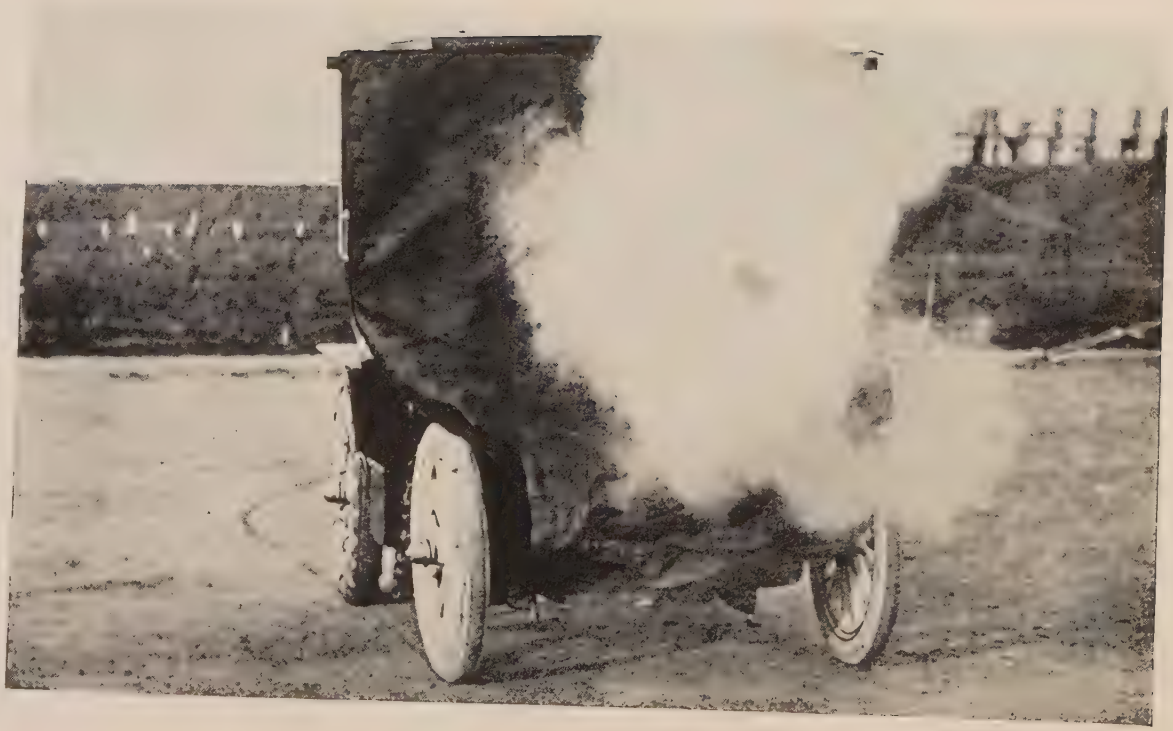
RECORD PERFORMANCES

France: "Lucky girl! She's got her 'Terrible' Boy home again. My enfant Terrible appears to be hopelessly at sea."

[The blazing indiscretion of the French Minister of Marine has lately been the subject of general European comment.]

Reproduced by kind permission of proprietors of "Punch," Sept. 24, 1902

MY SON ENTERING PORTSMOUTH DOCKYARD, WHERE, AS CAPTAIN OF H. M. S. "EXCELLENT," I HAD A RESIDENCE



MY MOTOR CAR, CHANGED INTO AN ARMOURED CAR, AS USED DURING A SHAM FIGHT, ON 24TH FEB., 1904

but open out a little. Broadsides are sometimes very regular. If they spread as indicated in the diagram and a battleship is anywhere in the zone she will evidently be hit in her vital part (shaded) by three out of the six shots.

Here was the solution of the problem, for if the observer saw one shot short of the target, he could assume that he was hitting with some of the others. This is what is called straddling the enemy.

That this was the only guide as to whether you were hitting or not was not accepted as a fact until 1909, so we lost six years of progress, and even when it was accepted it could not be put into practice because we had no means by which we could fire our guns in broadsides, so further progress was delayed.

The experiment I wanted carried out was in connection with what I have referred to as the zone. It was necessary to know into what space the shots would probably fall, and if some of them fell wide of the average, then the gun sights would require correction. I called it calibrating the guns. It had not been thought of before. Their Lordships would not allow me to carry out this experiment, and progress was hindered.[1] In my letter to the Admiralty applying for H.M.S. *Drake,* I pointed out to their Lordships that before she could carry out the experiments it would be necessary to supply her with new gun sights. Since 1900 I had been pointing it out to them. Their Lordships well knew that the gun sights were inefficient, but they did not like being reminded of the fact. So on the 2nd March, 1904, they replied as follows:—

"Their Lordships strongly disapprove of the remark which distinctly implies that the *Drake* is not

[1] This necessary experiment was delayed until 1905.

now furnished with serviceable sights, whereas the sights fitted to her guns had every improvement embodied in them when they were designed and made, and are of the same pattern as fitted to modern ships generally."

Their Lordships did not approve of my endeavours to improve the gunnery of the Fleet, and no steps were taken as regards calibration until they went out of office. But though they *frowned* on my proposition to investigate the long-range firing question, a few months later they decided to form two committees, one presided over by Admiral Sir Reginald Custance, in the *Venerable;* the other presided over by Admiral Sir Hedworth Lambton,[1] in the *Victorious.* The two committees were to have a free hand and fire what ammunition they liked; they were to investigate thoroughly the whole subject of long-range firing; and they were to draw up a scheme of target practice, and decide what targets should be used. At the conclusion of their experiments the two bodies were to meet and send in one joint report.

After wasting an enormous amount of ammunition the committees found themselves diametrically opposed on most of the important points, and instead of a joint report they sent in two separate documents.

Their Lordships decided that the suggestions and system put forward by Sir Reginald Custance, of the *Venerable,* should be adopted for use in all ships, but they added a clause "that alternative systems might be used instead of it."

The suggestions put forward by the *Venerable* committee were so impossible that all ships took advantage of the last paragraph of the Admiralty letter, and the battle practice remained a "go as you please" operation,

[1] Admiral of the Fleet Sir Hedworth Meux, M.P.

every ship using any method it preferred for grouping and firing its guns, and every Commander-in-Chief adopting his own particular scheme. No rules were laid down by the Admiralty and there was no competition.

Reorganising the Gunnery School and teaching the men to shoot was quite an easy matter, but when I surveyed the general state of the gunnery in the Fleet I found it deplorable. And in the background was an apathetic Admiralty disinclined to improve it.

All the gun sights were inefficient; we had no proper regulations for prize firing, no proper targets, no instruments for carrying out long-range firing, no authorised scheme for battle, no suitable target for long range. There was no scheme for testing the gun-sights, and we had no efficient sub-calibre guns, and no efficient aiming rifle. The Germans at this period were far ahead of us.

Although the *Scylla* and *Terrible* had shown what could be done, and what was required, the Admiralty had taken no steps to improve matters. They had acted on none of the suggestions put forward, nor would they allow that the gun sights were inefficient.

In 1898 it had been demonstrated by H.M.S. *Scylla* that when firing with a telescope sight the man looked through the telescope with one eye and shut the other. As he had not a third eye, any corrections requiring to be applied to his sight, either elevation or deflection, had to be put on by another man. As explained in an earlier chapter, I supplemented the guns' crew by a man and christened him the "sight-setter." For this innovation I got a reprimand from the Admiralty, but about two years afterwards their Lordships recognised the essential point and allowed an additional man at each gun for sight-setting.

On inspecting some new gun sights on board H.M.S. *Lancaster* in 1903, I found no provision had been made

for a sight-setter to work them, and since they had many other defects also, I referred to them in my report as inefficient. Their Lordships, on the 27th October, 1903, informed me that they did not approve of the tone of my letter. They strongly deprecated the use of such an expression as "inefficient" when applied to fittings which had been adopted by the Admiralty as the outcome of many years of experience and after consultations with eminent designers outside the Service. All the gun sights of the Fleet were, nevertheless, inefficient, and every one knew it. The Admiralty knew it, but they did not want to do anything, and they boycotted every recommendation I put forward.

Lord Charles Beresford, the Commander-in-Chief of the Channel Fleet, had frequently referred to the inefficiency of our gun sights, and Admiral Sir Cyprian Bridge expressed his opinion of them in the following language: "It would not be possible to characterise with more than deserved severity the atrocious scandal of our inefficient gun-sights; the sights of H.M.S. *Centurion's* guns were so defective that she was not fit to go into action."

The story of H.M.S. *Centurion* is worth telling. In 1904 new gun sights were made for her. It was my duty as Captain of the Gunnery School to examine them and report whether they were serviceable or not. They were tested and found incorrect, so I could not pass them. The Admiralty tried to cajole me into passing them, but I would not, so they sent down one of their own officials who passed them, and the ship was sent to China with gun sights so defective that, as Admiral Sir Cyprian Bridge stated, the ship was not fit to go into action.

As the Admiralty remained immovable, on the 11th January, 1904, I wrote the following letter to their Lordships:

"The most important item of any gun mounting is the sighting appliance.

"Our sighting appliances for all natures of guns are, I consider, at present most inefficient, and my opinion is that all the guns in the Navy should be re-sighted.

"It is unnecessary for me to specify the defects, as I have so often done so during the last five years. It is unnecessary for me to recapitulate the facts which have led to our gun sights being in their present condition. I only wish to again urge the importance of consideration being given to the matter.

"I feel it my duty as Captain of the *Excellent* to continue urging, and to place on record that I have urged the matter to the utmost of my power and ability, for in the event of war, and our inefficiency in sighting proving disastrous to the Fleet, had the Captain of the *Excellent* not called the attention of the authorities to the deficiency he would have been criminally in fault."

This letter was too much for the Admiralty. They did not reprimand me nor did they appear to mind my again using the expression "inefficient." They were obliged to do something, so they had a conference and discovered (what every one else knew) that *all the gun sights of the Fleet were inefficient, and that the guns of the whole Fleet would have to be re-sighted.*

Vitally important as the question was, their Lordships proceeded in their usual dilatory and unbusiness-like way, and consequently very little was done towards re-sighting in 1904.

On February 24th, 1904, H.M. King Edward VII came to Portsmouth and visited Whale Island. We had a sham fight and my motor-car took part in the attack. It was covered in so as to represent an armoured car, and a Maxim gun was mounted beside the driver. Like all authors of new ideas I was laughed at, but His Maj-

esty informed me that he considered that armed motor-cars would be a feature in future warfare. The soundness of that view was fully demonstrated during the late war, which saw the armed motor-car develop under the pressure of events into the now famous tank.

My two years as Captain of the *Excellent* were one continuous battle with the Admiralty. They were as determined that the gunnery of the Fleet should not be improved as I was determined to improve it. Every suggestion that they could possibly delay, or turn down, they did. They ruined the gun layers' test by increasing the range to such an extent that the men could not see whether they were hitting or missing; they issued such ridiculous instructions as regards the King's Medal for good shooting that on some occasions it had to be tossed for. During this period of maladministration Lord Selborne, who was the First Lord of the Admiralty, was stumping the country, and declaring in his speeches that, "Gunnery, gunnery," was considered by the Admiralty to be of vital importance. And on the 24th March, 1904, he wrote to me as follows: "The Lords of the Admiralty have for long devoted and are still devoting their whole heart and soul to the question of improving the gunnery of the Fleet."

Fortunately for the country, shortly afterwards, before they could do any further harm to gunnery, Lord Selborne and his Board were replaced at the Admiralty, and, as *Punch* rightly surmised, there was no more "Gunnery Hash."

I may perhaps refer here to an incident in my career which was not naval. On the 13th June, 1903, I was made an Honorary LL.D. of Cambridge. The other recipients were the Duke of Connaught, the Archbishop of Canterbury, Lord Grenfell, and Sir John French. We were all assembled in one of the colleges, where we were

provided with red gowns, and thence marched in a procession across the grounds to the Senate House.

The Senate House was crowded with undergraduates, who gave us a wonderful reception, and made some very funny remarks on our combination of full dress uniform and red gowns. The Duke of Devonshire, who was Chancellor, stood on a raised platform, and taking each recipient by the hand made a speech in Latin. What he said about me, translated into English, is as follows:

> "Captain Percy Scott has distinguished himself in naval warfare off the mouths of the Niger, the Congo, and the Nile. As Commander of H.M.S. *Terrible,* he had reached the coast of Natal at a critical moment, when his ingenuity and resourcefulness had made it possible for the great naval guns of that vessel to be effectively used on land, and thus supplied our soldiers with absolutely unexpected reinforcements at a time when they were sorely needed. He had since distinguished himself in a similar manner off the coast of China, and had brought his formidable cruiser safely back to the harbours of England amid scenes of enthusiastic congratulations. He was the fittest recipient of the final crown of that day's ceremony.
>
> "'Ceu pressæ cum iam portum tetigere carinæ puppibus et lætæ nautæ imposuere coronas.'"

The ceremony was followed by a luncheon, a reception, a dinner, and a dance. Professor Sir Alfred and Lady Ewing took me into their house and made my couple of days at Cambridge very enjoyable.

CHAPTER XII

INSPECTOR OF TARGET PRACTICE

Appointment as Inspector of Target Practice—Battle Practice Conditions—Order out of Chaos—Improvement at Last—My Visit to Kiel—The Chief Defect of the German Navy—A Lost Experiment—"Director Firing."

On the 24th February, 1905, I was appointed "Inspector of Target Practice." By the terms of the original Order in Council the position was described as "Director of Target Practice," the Admiralty desiring to copy what the United States of America had already done in making Captain W. Sims Director of Target Practice.

Captain Sims was a very able Director. He was backed by the United States Naval Department and by the President of the United States, consequently he could do something. But if I had been appointed as Director it would have been a very different thing. I should only have been backed by Sir John Jellicoe, who was then Director of Naval Ordnance: but in name only, for he had little power to do anything and was not a member of the Board of Admiralty. It was useless for me to try to play Captain Sims' part without his power, so I got the name changed from "Director" to "Inspector" of Target Practice.

We have never had a "Director" of Target Practice, and, much as it is wanted, I do not think we are ever likely to have one until the Admiralty are forced into recognising that gunnery is of importance.

The comment of Mr. Gibson Bowles, M.P., on my appointment was unusual. He remarked that Admiral Sir

Percy Scott "had made the gunnery" of the Navy in spite of the Admiralty, and asked what the Admiral's new duties were, for he was a "rather peculiar wild animal to let loose on a tame Board of Admiralty" (*Times*, 8.3.05). Why Mr. Gibson Bowles called me a "peculiar wild animal" I do not know.

My new duties were to attend as many firing practices as I could, report on them, and offer suggestions for improvements. The first thing I had to do was to carry out experiments for calibrating the gun sights, which the Admiralty had disallowed in 1903. I do not think that they realised the importance of it. The experiments were quite successful. A calibration range was established, and it has been in use ever since.

During 1905 I attended all the firings carried out by the Channel, Atlantic and Mediterranean Fleets, and had ample opportunity of seeing what a terrible state we were in as regards preparedness for war. To my lay readers it must appear a wonderful thing that, although a man-of-war is in reality only a platform to carry about guns, no attention was given to teaching the officers and men how to use the guns; the whole energy of the Navy was devoted to beautifying the ships.

Sir John Jellicoe, whose appointment as Director of Naval Ordnance coincided with mine as Inspector of Target Practice, had rescued the gun layers' test from the chaos that Lord Selborne's administration had left it in, and in 1905 it was carried out in a fairly uniform manner. But the results were shocking, the Fleet only hitting the target 56 times out of every 100 shots fired, and some ships never hitting the target at all. My late ship, H.M.S. *Scylla*, that had been *top ship* of the Navy, came out at the bottom with a score of NO HITS.

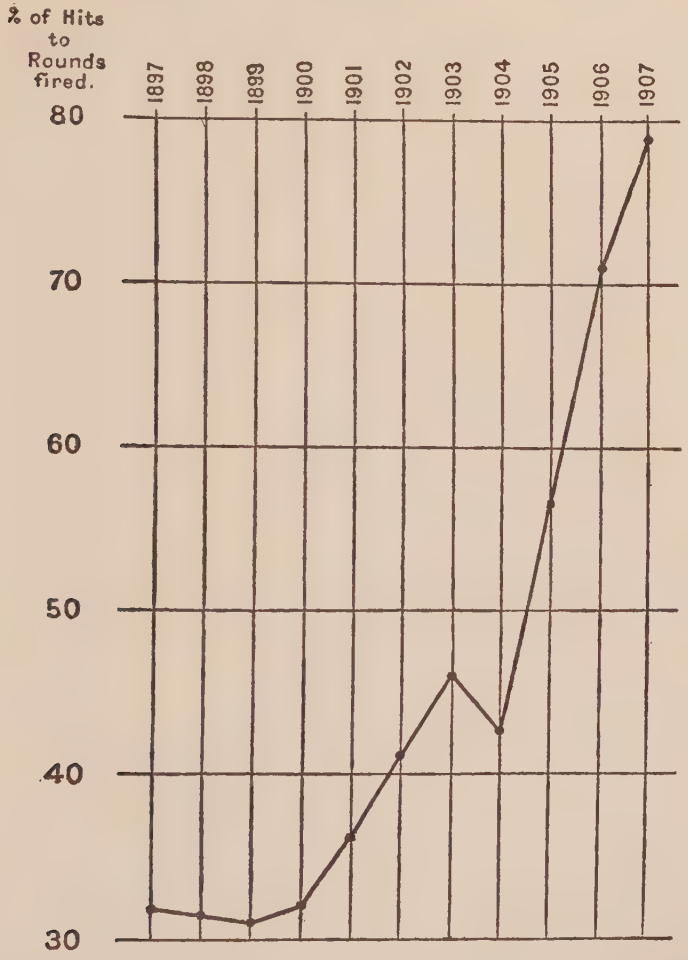
The battle practice for this year was deplorable. No rules had been laid down, the Fleet had no efficient sights

for the guns, and they had none of the necessary instruments for carrying out firing at any range but a very short one. The consequence was that in my first year as Inspector of Target Practice the practice for battle was a "go as you please." Each Fleet did as it liked. Some used one pattern of target, some another; some used the target moored, some used it drifting; some opened fire at one range, some at another. As to organisation, there was none, and as regards methods of using the guns of the ship every gunnery lieutenant of a ship adopted his own particular method, and christened the method with some wonderful name. Of the 68 ships whose battle practice I attended—

21	ships	styled	their	method of firing as	Independent.
14	"	"	"	"	Salvoes.
8	"	"	"	"	Control.
7	"	"	"	"	Group Salvoes.
5	"	"	"	"	Broadsides.
4	"	"	"	"	Volleys.
4	"	"	"	"	Broadside Volleys.
4	"	"	"	"	Controller's Salvoes.
3	"	"	"	"	Rapid Independent.
3	"	"	"	"	Rapid
2	"	"	"	"	Electric.
1	ship	styled	its	"	Slow.
1	"	"	"	"	Independent Control.
1	"	"	"	"	Group Volleys.
1	"	"	"	"	Rapid Controlled.
1	"	"	"	"	Volleys by Groups.
1	"	"	"	"	Single in Rotation.
1	"	"	"	"	Controlled Group Volleys.
1	"	"	"	"	Group Independent.
1	"	"	"	"	Sectional Volleys.

These various terms meant that all the gunnery lieutenants were trying to do broadside firing without the means to do it, and without any assistance or guidance from the Admiralty. 1905 was a record year for gunnery in one way; the Director of Naval Ordnance, the Captain of the Gunnery School, and the Inspector of Target Practice were all working harmoniously together to

improve naval shooting. This friendly relation had never existed in the Navy before.



This shows that from 1897 to 1900 no improvement was made in shooting. From 1900 to 1903 there was improvement. In 1904 it went back again owing to the unwise action of the Admiralty in increasing the range. In 1905, 1906, and 1907 it advanced rapidly.

The result of this very proper combination was that during the latter part of 1905 I was very busy in get-

ting out new rules, the D.N.O. in getting the necessary material, and the Gunnery School in giving the officers and men the necessary training.

At the end of the year the battle practice return was made out for the first time with the ships in their order of merit, and competition was thus introduced. These circumstances, combined with courts of inquiry on all ships that did badly, bore fruit in the following year, and the gunnery of the Navy began to improve. In 1906 a great many ships of the Fleet had efficient gun sights, and some of the material necessary for carrying out battle practice; they had proper targets to shoot at, and they had rules to guide them in carrying out the firings. The result was a very great improvement in the battle practice, and the gun layers' test advanced from a percentage of hits of 51 to a percentage of 71.

The year 1907 showed a still further advance in battle practice. Although the range was considerably increased, the Fleet's average in hitting the target was just double what it was in 1905. In the gun layers' test the improvement was so marked that it was decided to reduce the size of the target for the firing in the following year's test. Many men in 1907 never missed the target at all, and the average of the whole Fleet was 79.1 of hits out of every 100 rounds fired, which is nearly double what it was in 1904.[1]

During the period of this great advance in naval gunnery Sir John Fisher (now Lord Fisher of Kilverstone) was First Sea Lord of the Admiralty, and Sir John Jellicoe (now Viscount Jellicoe of Scapa) was Director of Naval Ordnance.

In 1905 we had a very high appreciation of the German Navy, but our information about it appeared to be very limited, and as we knew nothing of their gunnery

[1] Cf. Appendix I.

WITHOUT PREJUDICE.

Britannia. "Accept my congratulations, Sire, on the splendid growth of your Navy. And, since I have your assurance that your programme is not an aggressive one, I feel sure you will be interested to see what I have been doing in the last three years!"

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A LONG SIGHT BETTER.

JOHN BULL. "HULLO! NEW CHEF, EH? GOOD! I KNOW *HIM*. NO MORE *GUNNERY HASH* NOW!"

[The appointment of Sir JOHN FISHER as First Sea Lord is a guarantee that such scandals as that of the *Centurion* gun-sights will not be repeated.]

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I thought I would pay a visit to Kiel. Prince Henry of Prussia, who was then in command of the High Sea Fleet, sent his Flag Commander and Flag Lieutenant to meet me at the station, and I was conducted straight to his schloss, my luggage being dispatched to the hotel. In explanation of this arrangement Prince Henry told me that he had to leave for Darmstadt in an hour, and that he wanted to talk with me before his departure. Our conversation was almost entirely confined to gunnery. He had evidently followed our progress very closely, and was quite depressed when he referred to his own great difficulties and the impossibility of making a Navy on a short-service principle, for a sailor could not be made in three years. The system provided a reserve of more than the numbers required, but these men, he said, would be no good when called up. The War was to prove the correctness of this opinion. I had intended remaining at Kiel only three days, but Prince Henry asked me to stay another day so as to dine with him on his return. Meanwhile he put at my disposal his Flag Commander and Flag Lieutenant to show me round, but he added that I must not ask to see their range-finder as it was very secret. I did not want to see their range-finder. I had tried it and condemned it. Zeiss, the maker, always brought his inventions to us before taking them to the Germans.

For the next four days I was all day and half the night in the society of German officers who all spoke English fluently and were all connected with naval gunnery. I am quite sure that they were selected officers, and that they decided day by day what questions should be asked me, because I was never asked the same question twice. We were under the impression then that the Germans knew everything about our Navy, and I was consequently much surprised at the simplicity of their queries. Some

referred to things that were obsolete in our Navy; for others they could have found the answers in almost any of our published books and newspapers. In short, I came to the conclusion that they knew very little. Nor, on reflection, could it have been expected to be otherwise, since they had no time to devote to the higher grades of training in gunnery, all their time being taken up in teaching the recruits the elementary part of a sailor's education. Prince Henry's flagship, the *Deutschland,* at that time had 60 per cent. of men of under three years' service.

The German ships were in some respects very good, as—in contradistinction to ourselves—the race is quick in adopting new ideas, and their fire control instruments were ahead of ours. The backbone of a Navy is, however, the personnel, and herein they failed. Training recruits in Kiel harbour was like trying to make a sailor on the Serpentine. Professionally their education was bad, but it was bad morally also on account of the example set to the men by their officers. I found out that only a small percentage of the officers were gentlemen, and that they treated the men very badly. They were not sportsmen, they played no games, and their only form of recreation was beer and dissipation. This, no doubt, accounts for their cowardly and brutal conduct during the War, and also for the fact that their fleet, without firing a shot, was driven into British harbours as meekly as a flock of sheep.

After my visit to Kiel, having seen the enormous elevation the Germans were giving their guns, I realised that they contemplated firing at very long range, and that we might expect a large proportion of hits on the deck instead of on the side armour. To test the matter I suggested using an armoured hulk as a target, and a drawing of the ship was made. Admiral Jellicoe, who

was at the Admiralty, was keenly interested, and some experiments were carried out to see if as a measure of economy we could use some of the old wrought-iron armour. It was found that this old armour would not keep out the modern shell projectiles, and that we should have to plate the hulk with the hardest armour. Money could not be obtained for that purpose, and the idea was dropped.[1] The information we should have gained from this experiment we learned at the Battle of Jutland by the destruction of some of our ships.[2] After this battle additional deck protection on an extensive scale was provided in the majority of our heavy ships.

In the autumn of 1907 I had to give up the post of Inspector of Target Practice, on being appointed to command the Second Cruiser Squadron attached to the Channel Fleet, which was under the command of Admiral Lord Charles Beresford. At the same time Sir John Jellicoe left the Admiralty to take command of the Atlantic Squadron. During our time in office we not only managed to introduce many reforms in naval gunnery, but tried hard to introduce "director firing." Unfortunately the Director of Naval Ordnance was not a member of the Board of Admiralty, and consequently carried no weight as regards naval gunnery, and this very necessary method of firing was not generally adopted until seven years afterwards, when war proved that the guns in our ships were of no use without it—a fact which throws a very heavy responsibility upon the Board of Admiralty, which boycotted its introduction in former years.

[1] The last correspondence I had with the Admiralty about this hulk target was dated 19th February, 1913. In that letter I again strongly advocated the proposal.

[2] "The Grand Fleet, 1914-1916," by Admiral Viscount Jellicoe, p. 420.

CHAPTER XIII

H.M.S. *GOOD HOPE* WITH THE CHANNEL FLEET

In Command of the Second Cruiser Squadron—Obsolete Ideas—Inadequate Training for War—Housemaiding the Ship Paramount—The Test of War—Confusion and Unreadiness—Wrong Pattern Torpedo—Lord Charles Beresford and the Admiralty—H.M.S. *Good Hope's* Gunnery—First in the whole Fleet—Our Cruise in Northern Waters—My New Appointment—An Independent Command—A New Routine and Efficiency.

On the 15th July, 1907, I hoisted my flag in command of the Second Cruiser Squadron, consisting of the *Good Hope, Argyll, Hampshire, Duke of Edinburgh, Black Prince,* and *Roxburgh.* We were attached to the Channel Fleet, and as we were generally in company with it, I, as a flag officer, had nothing to do; a flag officer had practically no control over his squadron when in the presence of a senior officer.

Throughout the Navy in 1907 the rule was that the senior officer made out a fixed routine which all ships had to follow, irrespective of the time they had been in commission. What exercises the ships are to perform; what clothes the officers and men are to wear; what boats the ships are to use; what awnings the ships are to spread; when the men are to wash their clothes; when and how the washed clothes are to be hung up, and when they are to be taken down—all these are matters over which captains of ships have no jurisdiction; they are settled by the senior admiral present.

One very important rule attached to the conduct of a fleet; whenever the senior officer's ship did anything, all the rest of the ships in the fleet had to do likewise, and if the senior officer's ship forgot to do what she ought

to do, then the other ships must not do it. Any one can see how this makes for efficiency! I remember coming up on deck once and finding that, although it was pouring with rain, the guns were not covered. I pitched into the officer of the watch, but got the worst of it; he informed me that he could not cover the guns as the flagship had not yet covered hers. It is the rule of the Service that a senior officer can do no wrong. We preserve our manners at the cost of efficiency.

Special permission could, under some circumstances, be obtained from the senior officer for not following his example, but wireless telegraphy has introduced a difficulty in deciding who the senior officer is. On the occasion when I was senior officer at Portland, an Admiral, junior to me, came into the harbour with some washed clothes hanging up to dry. Seeing that my flagship had no washed clothes hanging up to dry, he made a signal, "Permission is requested to keep my washed clothes hanging up, as they are not dry." I granted him the permission, but a heated argument took place afterwards as to whether I was right or wrong in so doing, as an officer, senior to me, was about ten miles out to sea, and I could have passed the request out to him by wireless telegraphy. No decision had been arrived at on this important point before I gave up command of the squadron. The introduction of drying rooms for washed clothes in H.M. ships has greatly reduced the amount of signalling with regard to where and how clothes are to be hung up.

One of my captains pointed out to me that on account of the structure of his ship he sometimes required an awning spread when the senior officer's ship did not. I had to inform him that, although I was in command of the squadron to which his ship belonged, I had no authority to grant him permission to spread an awning, but I could forward his request on to the senior officer present.

Signalmen in all ships were trained to keep a smart look-out to see if any ship had a pair of trousers hanging in the wrong place. I suggested that it would have been of more war value if they were trained to find the periscope of a submarine. Such an idea was considered very ridiculous; no departure could be made from the old and obsolete notions which obtained throughout the Service. Our brains and energy were not used in training for war; housemaiding the ships was to remain as it had been the paramount consideration.

This is the training for war we all had, and the expression "all" included, as a rule, their Lordships the Commissioners of the Admiralty. Hence it is not surprising that when war did come, the Admiralty was in a state of dislocation and confusion. One department was wiring to a squadron of ships to do one thing, while another department was giving it contrary orders. There was little organisation and little method, and we allowed the German cruisers in Far Eastern waters to get out of port and prey upon our commerce, with the result that we had to employ ships for several months in rounding them up, whereas a little intelligence properly directed would have blockaded them all in their harbours on the day war was declared or forced them to fight.

In addition, we had no up-to-date mine layers, nor an efficient mine; no properly fitted mine sweepers; no arrangements for guarding our ships against mines; no efficient method of using our guns at night; no anti-Zeppelin guns; no anti-submarine precautions; no safe harbour for our Fleet, and only a few ships (eight) were partly fitted with a proper method of firing their guns. Our torpedoes were so badly fitted that in the early days of the war they went under the German ships instead of hitting them. This was very galling to our subma-

rine officers and men, who displayed great gallantry in getting at the German ships.

Training naval officers and men as housemaids is not good for war; *brains* are required. But, however faulty our training in peace may have been, it did not affect the character of the British naval officer and seaman. Whether in a ship, submarine, balloon, aeroplane, motor-car, tank, or as a soldier, the men who bore an anchor on their caps, and others who wore a sou'-wester, fought with bravery not surpassed by any men in the world. Of the many thousand who went to the bottom of the ocean, a large number might be alive now if in peace-time our legislators had attended to the war preparedness of ships instead of chiefly to the housemaiding of them. I once heard a statement that "the blunders of our politicians and legislators are paid for with the blood of our sailors and soldiers." How terribly the War has demonstrated the truth of this statement!

I return from this digression to resume my narrative of the *Good Hope*. Having practically no command of my squadron, I employed my time in trying to improve the shooting, and I succeeded so well that the *Good Hope* became, like the *Scylla* and *Terrible* in other years, top ship of the Navy.

My senior officer, the Commander-in-Chief of the Channel Fleet, was Admiral Lord Charles Beresford,[1] and it happened that the First Sea Lord was Admiral of the Fleet Sir John Fisher.[2] Lord Charles Beresford had on many occasions expressed his disapproval of the policy of Lord Fisher as regards his redistribution of the Fleet.

[1] Afterwards raised to the Peerage as Lord Beresford. He was a most popular officer. In the Navy we knew he was not a sailor, but thought that he was a politician; in the House of Commons, I have been told, they knew he was not a politician, but thought he was a sailor.—P.S.

[2] Afterwards Lord Fisher of Kilverstone.

Lord Charles Beresford's grievance against the Admiralty was that they were forming another fleet in home waters under the name of the "Home Fleet," and that it was not to be under his command. He explained to me that this Home Fleet [1] was a fraud on the public and a danger to the State; that so grave was the disorganisation and confusion, that, if the country had been suddenly attacked, the Navy, in his opinion, would have suffered a reverse, if not a severe defeat. Lord Charles appeared to be of opinion that he could either enforce his views on the Admiralty, or procure the retirement of the Sea Lords; that the Admiralty were not to remain in control of the Navy unless they accepted him as a dictator of what they should do. He was, in fact, to be an admiralissimo.

I listened to all this. Very politely, I refused to join in a campaign against the Board of Admiralty. In so doing I fully appreciated that my Commander-in-Chief would be much annoyed. I remained firm in my determination to do my duty to the country and the Admiralty as I saw it. Soon afterwards, whether by a mere coincidence or otherwise, a charge of insubordination was made against me, and Lord Charles applied in the strongest possible terms to the Admiralty that I should be superseded in the command of my squadron. Their Lordships, the Commissioners of the Admiralty, of course, did not supersede me.

I should have been well content never to think of this episode again, so trivial in its origin. But there are strong reasons against ignoring the matter. Under such headings as "Admirals' Quarrel," "Difficulties in the Navy," "Scott too Free," the incident was related, so far as the facts were known, and commented on in the columns of the daily and weekly Press throughout the

[1] The first Fleet of the Home Fleets later on became the Grand Fleet.

country. The story was retold in the Dominions; it was discussed with relish by the enterprising journals of New York; it woke journalistic echoes in Paris and Berlin. While the newspapers were furiously raging together, and for some time after, my mouth was closed, and I was still on the active list when four years later Lord Charles Beresford published his book "The Betrayal," in which, without mentioning me by name, he thought fit to cast reflections upon my character and ability as an officer. This attack seemed to me to demand notice, and as soon as I retired on promotion to Admiral, I took steps to present to the public, through the courtesy of the editor of the *British Review,* a "Reply to Lord Charles Beresford."[1] There I am content to leave the matter.

My attention in the meantime was devoted to fitting my flagship, H.M.S. *Good Hope,* with "director firing," so that if she had to fight a German there would be a chance of her remaining on the top, instead of going to the bottom.[2]

This operation was difficult, as I could get no assistance from the Admiralty, and was forced to beg, borrow, or steal all the necessary material. Fortunately, I had a very competent and clever torpedo officer, Lieutenant Charles Rice (a son of Admiral Sir Charles Rice). This officer made out all the drawings, and supervised the work, which could not have been done without him. His untimely death was greatly regretted. He was killed through the fall of an aeroplane in which he had gone up to demonstrate the utility of a wireless telegraphy invention he had devised. The nation lost a very valuable officer, and I lost a very charming friend.

[1] The *British Review,* April, 1913.

[2] H.M.S. *Good Hope* subsequently had to fight a German and she went to the bottom with all hands, but she had not then the description of director with which I fitted her.

As H.M.S. *Scylla* and H.M.S. *Terrible,* my two former ships, had been the top ships of the whole Fleet in shooting, H.M.S. *Good Hope* was very anxious to occupy the same position. Both officers and men worked hard, and in the competitions the ship came out top of the Channel Fleet, but seventh in the whole Fleet. This result was disappointing to me. It may be of interest to give the figures:

CHANNEL FLEET.—GUN-LAYERS' TESTS RESULTS.

Heavy gun-layers' test.		Light Q.F. Gun-layers' Test.			
		12-pr.		6 and 3-pr.	
Good Hope	6.6	*Good Hope*	6.4	*Good Hope*	8.6
King Edward VII.	6.1	New Zealand	6.1	Argyll	6.4
Hibernia	5.6	Africa	6.1	Irresistible	3.6
Commonwealth	5.3	King Edward VII.	5.7	Formidable	3.3
Hampshire	4.8	Talbot	5.4	Venerable	2.5
Africa	4.8	Formidable	5.0		
Talbot	4.8	Hindustan	5.0		
Black Prince	4.7	Hibernia	4.6		
Irresistible	4.5	Irresistible	4.2		
Britannia	4.1	Commonwealth	3.4		
New Zealand	4.0	Venerable	2.4		
Formidable	3.7				
Juno	3.7				
Venerable	3.6				
Argyll	3.5				
Roxburgh	3.1				
Hindustan	2.9				
Duke of Edinburgh	2.6				
Sapphire	2.3				

Some of the scores by the *Good Hope's* gun layers were out of the way—at least in those days—so I append them. The *Good Hope* had to steam at a speed of about twelve knots, and her gunners were required to fire at a target measuring only eighty square feet which was just under a mile distant. The vessel mounted two 9.2-inch guns of the Mark X type, firing 380 lb. projectiles,

and sixteen 6-inch breechloading guns of the Mark VII type, firing 100 lb. shells. The results were as follows:

9.2-Inch Guns.

	Rounds fired.	Hits scored.
C. Todd, C.P.O.	8	6
E. Burgess, P.O. 1st class	9	9
Total	18	14

6-Inch Guns.

E. H. Brown, Gunner R.M.A.	11	10
R. W. Newman, A.B.	9	9
J. Brown, Gunner R.M.A.	10	8
L. S. Young, P.O. 1st class	10	8
A. C. Atkins, Corporal R.M.A.	9	8
A. Hazelgrove, A.B.	8	8
F. J. White, P.O. 1st class	9	7
C. Parsons, P.O. 1st class	8	7
M. Flavin, A.B.	9	6
A. Colwell, P.O. 1st class	9	6
C. Lord, C.P.O.	8	6
C. E. Rice, Leading Seaman	8	6
C. W. Smith, Leading Seaman	8	5
C. J. Sommerill, P.O. 1st class	8	5
G. H. Cooper, Gunner R.M.A.	7	5
J. Dilkes, A.B.	9	2
	140	106

The run for the 9.2-inch guns was two minutes, and for the 6-inch guns one minute, and therefore, in summary, the average result of each gun per minute was as follows:

	Per minute each gun.	
	Rounds.	Hits
9.2-in. guns	4.5	3.5
6-in. guns	8.75	6.6

The shooting with the 6-inch guns was then without parallel in the British Fleet.

The commanding officer of the *Good Hope* was Captain E. H. Grafton, while the gunnery officer was Lieut. J. L. S. Kirkness.

It was during Fleet manœuvres of this year that we

experienced great difficulty in the matter of cipher messages. Under the system then in use valuable time was frequently lost and many mistakes occurred. I remember getting one signal to take my ship to a certain spot indicated by latitude and longitude. It was realised that a mistake had been made when the position as indicated proved to be the Sahara Desert.

Putting a message into cipher or de-coding a cipher involved the use of several books, a process which occupied much time and made it easy to commit errors. I conceived the idea of a double typewriter, the message being sent in cipher and, passing through the typewriter, coming out *en clair*.

I designed such a machine and submitted it in February, 1907, to the Admiralty, who expressed the following opinion on it: "The machine appears to be indestructive, is quick in working, save for a person unaccustomed to typewriting, and mistakes are improbable and easily detected and corrected." Mr. Winston Churchill said that this machine filled him with hope that I had solved or was about to solve the difficult question.

The Admiralty "secret" patented the invention and consigned it to themselves, and then, in accordance with their usual practice, started to improve upon it. Seven years afterwards, on the 6th of July, 1914, their Lordships informed me that they waived the right of secrecy of my invention, and that I could put it on the open market if I wanted to do so. In other words they turned it down, and the Admiral had to fight the Battle of Jutland with the handicap of the old appliances.

Lord Jellicoe has declared [1] that the time of the receipt of a signal is not a true indication of the time at which the officer making his report commenced his task. A variable but considerable time is bound to elapse—a

[1] Lord Jellicoe's "Grand Fleet, 1914-1916," p. 318.

period which includes the time taken to write out the report, to transmit it to the wireless office or bridge, to code it, signal it, de-code it on board the receiving ship, write it out and transmit it to the bridge. It was this very delay that my mechanical coder or de-coder was designed to avoid.

Early in 1908, we went for a cruise round Ireland and Scotland, and visited many interesting places, finally getting back to Portsmouth in May, 1908. After a short stay, we received an order again to paint the Fleet, this time to do honour to M. Fallières, the President of the French Republic, who was to cross to Dover. Dover for a few days was very gay in entertaining the officers and men of the *Leon Gambetta,* the man-of-war which brought over England's illustrious guest.

These international amenities concluded, the Fleet went back to Portland, and H.M.S. *Good Hope* carried out her 1908 firing test. This time Captain Grafton and the officers obtained the place they desired, namely, *top ship of the Fleet.* The score of one hundred and twenty hits out of one hundred and fifty rounds was then unprecedented. I was very glad of it, as I liked every ship I was in to be absolutely the best in shooting.

The routine, when with the Battle Fleet, was dull and uninteresting. To get out a bower anchor and get it back again is not the most exciting of tasks, and even a pull round the Fleet becomes monotonous after frequent repetition. The day of these old-fashioned evolutions should have come to an end long ago. Efficiency can only be arrived at by allowing individual captains to arrange independently for their men's training. A captain had then hardly one day at his disposal for the organisation of training classes in gunnery, and for teaching things to his men which have far more to do with modern war-

fare than exercises handed down from the days of sailing ships.

Towards the middle of June the whole Fleet started on a cruise, with Christiania as its first halting-place. Such a large armada had never been previously assembled in Norwegian waters, and naturally excited considerable interest among the inhabitants of Norway. The *Good Hope* found herself relegated, with the cruiser squadron, to Bygdo Bay, a charming creek from which it was possible to land and walk the three miles into Christiania, or go direct by boat to the town itself. The officers thoroughly enjoyed the hospitality showered upon them, and several of them had the honour of being presented to King Haakon and his charming consort, at a dinner given in the newly decorated palace.

At this dinner I was asked if I could not provide some little surprise for the morrow, when the King and Queen of Norway were going to steam round the Fleet. The request rather upset my appetite, as I could not think of anything. Fortunately an idea came. When I returned on board—very late—I routed out the Commander. He and a few carpenters stayed up all night, and the next morning when His Majesty, the King of Norway, passed H.M.S. *Good Hope,* he saw traced in human letters on the ship's side the words "Leve Kongen," which means, I believe, "Long live the King," or at any rate it was the nearest that I could get to it in the time. I was with the King, on board his yacht, and both His Majesty and the Queen were very pleased.

The night before we left Christiania I gave a ball on board the *Good Hope,* and a more beautiful assemblage of ladies it would have been very hard to see. When we broke up I heard many an earnest farewell uttered, and many were the pledges mutually given of another meeting. For two or three days after leaving Christiania

my officers were very dull; the fair ladies of the northern city had made a deep impression on them.

After this event, H.M.S. *Good Hope* was ordered home. We proceeded to Portsmouth, and on the 30th July, 1908, I had an interview with the First Lord of the Admiralty, Mr. McKenna, who informed me that I should no longer be troubled by Lord Charles Beresford, as the Admiralty had decided to place me in command of a squadron of cruisers to represent the Mother Country in South Africa, during the time of the assembly of the Convention for the discussion of closer union between the various states of the great sub-continent.

As regards the last signal made to me by Lord Charles Beresford, Mr. McKenna informed me that he was very anxious to hush the matter up; that he was going to make a statement in the House of Commons justifying my action, and that he hoped in these circumstances I would say no more about it. To this I agreed. Mr. McKenna made his statement in the House. It was so evasive that it would never have been questioned, had not Lord Charles years afterwards revived the question by writing and publishing an inaccurate account of it.

Apart altogether from this personal matter, there was an obvious reason for the Admiralty's choice, since, with the possible exception of Sir Hedworth Lambton (afterwards Sir Hedworth Meux), I had been more closely associated with South Africa during the war than any other Admiral. I had many friends there, particularly in Natal. I was delighted with my new appointment, besides being more than pleased to get clear of the Channel Fleet. In my year and a half I had not been able to do anything, and I had learned nothing except how *not* to manage a fleet.

While H.M.S. *Good Hope* was at Portsmouth, preparing for her long cruise, an interesting ceremony took

place. Princess Christian presented the ship with some silver plate and a silk ensign, which had been subscribed for by the ladies of Cape Colony. In a short speech Her Royal Highness expressed her pleasure in making the presentation, adding that her feelings with regard to South Africa were of a very special nature—an indirect reference to the lamented death of her son, Prince Christian Victor, which awakened the sympathetic interest of her hearers.

At last, on the 8th September, 1908, we left Portsmouth, the squadron consisting of the *Good Hope* (flagship), the *Antrim, Carnarvon,* and *Devonshire;* four fairly good ships. The moment that I had been looking forward to for many years had come at last. I was in command of a squadron of H.M. ships, and was in a position to do away with the existing routine, and convert all the ships into schools, with every one on board learning something more useful about his profession than the housemaiding part of it. A man-of-war must, of course, be housemaided—that is, she must be kept clean. What I had to break down was the tradition that housemaiding should be the chief consideration. It had been so ever since I joined the Service, and the advancement of the officers and the men, and consequently the fighting efficiency of the Navy, had been entirely subservient to it.

I gave an order to the squadron that all the housemaiding was to be completed by 9 a.m., and that from that time on all attention should be devoted to training the officers and men in the essentials of their profession. This order, combined with breaking down some of the traditions of the Navy,—good in their time, but now out of date and obsolete,—had the desired effect, as the following results will show.

When I joined the squadron the ships had been fif-

teen months in commission, and during that time they had trained (under the old method of doing things) 900 men, which is 60 per month. In five months of the new method they trained 1000 men, which is at the rate of 200 per month. The new method practically more than trebled the amount of instruction given, notwithstanding its being a first attempt, carried out against some opposition, and in difficult circumstances, as we were on a purely pleasure cruise. If this routine had been maintained, and had been applied to the whole Navy, it would have trebled the fighting efficiency of the Fleet; but when I left the squadron on the 15th February, 1909, the routine I had instituted, and the "director firing" I had installed, were put on the scrap-heap, and the old methods reinstalled. That is one way we had in the Navy —a determination to fight against any change, however desirable.

CHAPTER XIV

AN IMPERIAL MISSION

En Route to the Cape—Durban's Welcome—The National Convention—Old Foes and New Friends—An Inland Trip—At Pretoria and Johannesburg—Lavish Hospitalities—Farewell to Durban—Festivities at Capetown—Farewell Messages—Off to the New World—Arrival at Rio—Promoted Vice-Admiral—Brazilian Enthusiasm—The President's Visit to the *Good Hope*—Uruguay and the Navy—Speeches at Montevideo—The *Pelorus* at Buenos Ayres—A Great Modern City—Departure from Montevideo—Battle Practice at Tetuan—I haul down my Flag.

The start of the voyage was a trifle inauspicious, for the weather was so boisterous that our departure was delayed for a few hours, but by the time the coast of Spain was sighted all traces of the gale had disappeared. On the 18th September the ship made her first stop at the barren island of St. Vincent, one of the Cape de Verde group, on which there is hardly a trace of vegetation from one end to the other. The Eastern Telegraph Company have a large transmitting station there with a staff of over eighty strong, who seemed very pleased to see the squadron. Thanks to their kindness, a short stay, which would otherwise have been most uninteresting, was rendered highly agreeable—a pleasant foretaste of what was to come.

On the 5th October, after having been sixteen days at sea, the squadron put into Saldanha Bay for a couple of days, completed with coal, and then left for Durban, where we were due to arrive in time for the opening of the National Convention. On Saturday, 10th October, the four cruisers rounded the headland known as "The

Bluff," which juts out from Durban, and entered the harbour.

Thanks to the large sums spent on dredging operations, Durban is one of the most commodious of ports, and the inhabitants were naturally not a little proud that ships of a draught of nearly 30 feet could come right up to the side of the quay and be tied up there just like a mail steamer. A great crowd had collected at the "Point," where I was to land, and at least 7000 of the townspeople must have given me a welcome when I set foot in the colony again after an absence of over eight years. The Mayor, Mr. C. Henwood, and Town Councillors in their robes assembled on a dais which had been erected for the ceremony of presenting an address. After the usual introductions the Premier delivered an address, in which he was good enough to recall my past services in the colony and to thank me and my brother officers for coming from so far to lend dignity by our presence to an historical occasion. In reply I thanked the colony for the great honour done me in sending the Prime Minister to greet me, and expressed my pleasure at revisiting South Africa at the time of the important Convention. The Town Clerk then presented me with an engraved address enclosed in a silver-gilt casket, of which perhaps the most conspicuous feature was a water-colour picture representing the squadron entering the harbour.

During the first week of the squadron's stay in Durban, the four cruisers were thronged every day with visitors, and entertainments galore were in progress for the men whenever they went into the town. A ball given on board the *Good Hope* made a marked impression on the majority of the guests, who were astonished at the ingenious manner in which the handy men could at short notice turn their floating box of machinery into a bril-

liantly illuminated ball-room with the large 9.2-inch gun as an effective background. The meeting of the Convention had brought to Durban nearly all the celebrities of South Africa, and most of them were amongst the guests present on this occasion. I felt as I looked round the company that there was something impressive in the very fact of men like Generals Botha, De Wet, and Delarey sitting down side by side with Lord Selborne, Sir George Farrer, Sir Percy FitzPatrick, and many others who had taken such a prominent part in arms against them but a few years previously. A tribute it was, too, to the good feeling which had begun to reign in South Africa, and the general desire to heal the wounds inflicted by a struggle which had in many parts all the horrors of a civil war. There was some speech-making in the course of the evening, and by way of disposing of the many rumours afloat as to the purpose of the squadron's visit, I quoted my sailing orders, so that it might be definitely understood that it was for the Convention, and for no other purpose, that I and my squadron were at Durban on October 11th, the day on which the Convention began.

Subsequently Sir Henry de Villiers, on behalf of the Convention, of which he was President, sent a message to England, through the High Commissioner, conveying to the King an expression of "loyal gratitude for the gracious sympathy with the people of South Africa in this important period of their history, so signally manifested by His Majesty in commanding the cruiser squadron, under Rear-Admiral Sir Percy Scott, K.C.V.O., to proceed to Durban to greet the Convention."

The following Sunday a contingent of men from each ship set out on a week's trip to the capitals of the inland States in a special train, and I left Durban with fifty-five of the officers by another special train. The Natal

Government had provided for the comfort of its guests in a most splendid way. Their agent, Mr. Vivian, had thought of everything; beds, food, wine, cigars, and even baths, were at the free disposal of all, and the trip was a revelation to many who took part in it of how comfortable railway travelling over long distances in South Africa can be made under favourable circumstances.

Most of the journey through the Transvaal was accomplished by night, and at 9 a.m. on Wednesday, the 21st October, we found ourselves at Pretoria Station, where our hosts had arranged for carriages to meet us. The men had arrived on the previous day, and had already at this time set out on their way to Johannesburg. Kruger's house was certainly the most impressive of all the sights in Pretoria, and one gained from its dimensions and those of the simple verandah in front of it some idea of the homely character of the famous President. The old-fashioned little dining-room contained a bust of the old Boer President, and round it on all sides were a profusion of wreaths sent from every part of the world at the time of his funeral. In the cemetery not far off is the grave with a marble bust at the head of it, and within a few yards lie the remains of Prince Christian Victor. Over the monument to this brave young prince, who died for his country in company with hundreds of others lying near him, the officers of the *Good Hope* hung a wreath by way of testifying their respect for the dead, and their sympathy for the princess whom they had welcomed on board but a few weeks previously.

Lunch was served at the Grand Hotel, and the Chief Justice, Sir James Rose-Innes, in proposing the health of the Navy, referred to the popularity of sailors wherever they go, and especially of British sailors. He spoke as one who had been the earliest to suggest a contribu-

tion from the Cape Government towards the upkeep of the Imperial marine, because he felt how bound up the prosperity of South Africa was with that of the Navy. Ministry had followed Ministry since that time, but this vote still stood in spite of the great financial difficulties with which in recent years South Africa had been confronted. He rejoiced also that this grant was not coupled with any local conditions or local control, for South Africa was not defended now off Durban or off Capetown, but wherever the Empire's foes were fought and smashed by the British Navy. On rising to respond, I thanked our hosts on behalf of the Navy, and reminded them that it was Trafalgar Day, and that this day henceforth would also be memorable to those present on account of this visit to Pretoria. For myself, I added, it had another personal association, for it was the birthday of my daughter, and had she been born three years later, I felt sure that she would have been christened "Pretoria."

After a most enjoyable stay at Pretoria we went on to Johannesburg. The authorities there had determined to crowd the maximum amount of hospitality into the short time at their disposal, so that no sooner had their guests returned to the Carlton from afternoon sports in the famous Wanderers' Ground than they found it necessary to change for a dinner given in honour of the Fleet by the Mayor and Councillors of the City. Lord Methuen, the Acting Governor of the Transvaal, was present at the banquet, which was described next day in the papers as one of the most representative gatherings ever seen at such a function in Johannesburg. The Mayor, Mr. J. Thomson, proposing the toast of the evening, "Our Navy," looked for the time when the Transvaal would, like the Cape, pay its quota towards the expenditure involved in imperial defence. In my reply, I

said I was going to take upon myself the very heavy responsibility of accepting on behalf of the Admiralty as much of the gold of Johannesburg as its citizens could afford to dispense with. Their Lordships would take this gold and transmute it into iron in the shape of battleships. I added that not only did all my officers and men wish most emphatically to revisit such a hospitable city, but I anticipated some difficulty in getting them all away that night.

The scene of our departure from the station that evening was nearly as exciting as that of our arrival, for, in spite of a heavy downpour of rain, large crowds had assembled to wish the sailors good-bye. No regiment starting out on active service could have received a more enthusiastic send off, and as the train moved out of the station, the cheering must have been heard all over the town.

Next morning Bloemfontein was reached, and here the Mayor had been joined by the military in dispensing the hospitality of the capital of the Orange River Colony. On arriving, the guests were told off in groups of five or six, and each group was allotted to one of the regiments who had brought carriages to take the visitors to the central square, where a large crowd had assembled to welcome them. A platform had been erected by the reception committee, and on the right of the dais fifteen hundred school children at a given signal sang the National Anthem, their treble voices ringing out with a pleasing effect, enhanced, probably, by the clearness of the air and the bright sunshine streaming down on the square. The Mayor, Mr. Chris Botha, in welcoming us, said that the occasion was an historic one, if only for the fact that it was the first time that a naval brigade had ever visited Bloemfontein. In return I expressed the hope that at some not very distant date there might be a

ship in the British Navy bearing the name of the magnificent colony—a sentiment which elicited loud cheers.[1] From the Orange River Colony we returned to Durban.

From every point of view the trip had been an unqualified success. Hundreds of inhabitants of this newly-formed state to whom the British Navy had previously been but a name were enabled to see what our sailors looked like, and feel, as they had never done before, a personal interest in our premier fighting force. Moreover, I may venture the hope that our visit did much to lessen the bitterness left behind by the last great struggle for predominance between the two races. The fact that on the entertainment committees at all the towns visited Britons and Boers were vieing with each other to welcome His Majesty's Navy gives ground for this aspiration, and while it is easy to multiply the directions in which good has resulted from this week of hospitality and entertainment, it is impossible to point to a single case where it has done any harm.

Before dismissing the subject, I ought to put on record the splendid behaviour of the men. The temptations to excess were very numerous. The Mayor of Johannesburg testified to their conduct in a private letter to Lord Selborne, from which the following extract is taken:

> "Should you be writing to the Admiral before he leaves our South African waters, I shall feel obliged if you will add a note on my behalf to the effect that the tone of the men, when in Johannesburg, was a credit to themselves, to their Admiral Commanding-in-Chief, and to his officers. Despite the pressing offers made by our townspeople, at all times and in all places, in the shape of liquid refreshment, the men behaved themselves in an exemplary manner. They were, indeed, a credit to the Service to which they be-

[1] This hope was even more appropriately fulfilled, for during the War a destroyer-leader was christened *Botha*.

long, and I feel it only right to ask you to kindly pass on my personal tribute in this respect to Admiral Sir Percy Scott."

The Squadron sailed on Monday, the 26th. Lord Selborne and Sir Matthew Nathan remained on board the flagship until nearly the last moment, and afterwards watched from the deck of the transport *Dufferin* the four ships steam majestically out of the splendid harbour which Natal has made. The crews were all upon deck and as they cheered their late hosts so the latter responded with equal enthusiasm, until the cruisers were too far out at sea for the sound of the acclamations to be heard. Then the Governor of the Colony made the following signal: "The cruiser squadron has made us more proud than ever of the British Fleet. The High Commissioner, the Governor, and the people of the Colony wish God-speed to all ranks." To this I replied: "We thank you for your kindness. We thank you for your hospitality."

The squadron next visited Port Elizabeth, a handsome town, and very prosperous. The Mayor received me in the market square, and in presenting an address from the townspeople, was good enough to say that the name of Sir Percy Scott had long been a household word in their midst. For the next two days, the whole town was *en fête,* and both officers and men had abundant opportunities for enjoying themselves.

On the 31st October, the Squadron left Port Elizabeth for Simon's Bay. Here fleets and fleetmen were no novelty to the inhabitants, but our welcome was none the less cordial. Admiral Sir George Egerton, the Commander-in-Chief of the station, held an "at home" in honour of the visitors, a highly successful function at which the large attendance testified to the esteem in

which the local Admiral was held by his friends and neighbours at the Cape.

After a few days at Simon's Bay, we went to Capetown, and as the squadron came in sight of Table Bay, it had been arranged that they should see the word "Welcome" spelt on the hillside by two thousand children dressed in white, and grouped in such a way as to give the appearance of letters when looked at from some distance off. The idea was a very effective and pretty one, well meriting the cordial thanks which I conveyed to the children in the following signal: "Thank you very much for your kind welcome. Through our telescopes we saw how charming you all looked."

The citizens of Capetown had managed to crowd into seven days a programme which might well have lasted over treble the time. The only shadow cast over the festivities was the regrettable illness of Sir Walter Hely Hutchinson, the Governor of the colony. His enforced absence threw an additional burden on Mr. N. F. de Waal, who acted as his deputy as well as that of the Prime Minister, away busy at the Durban Convention. How well he fulfilled his dual responsibilities will be evident in what follows, and the Navy had enough reason to be grateful to him and Mrs. de Waal for all that they did to make the visit to Capetown the brilliant success it was.

Long before the approach of the Fleet, the Adderley Street end of the gaily decorated pier and the whole of the foreshore were crowded with many thousands of people anxious to get a glimpse of the landing ceremonies. I went ashore, accompanied by the captains of my squadron, just before noon and was welcomed by the acting Prime Minister. At the Town Hall, the Mayor, Mr. M. F. A. Smith, gave an address in which he remarked that the presence of the cruiser squadron in

South African waters seemed to say to the people of South Africa, "The Fleet of the Empire still protects you." It was my agreeable task to tender my most sincere thanks for the cordial welcome vouchsafed me on reaching the capital of the colony of which my flagship bore the name. The visit to Capetown fittingly closed the South African tour, and I expressed the hope that before long I might have to return to celebrate a closer union of the colonies, which I trusted would bring wealth and lasting peace to the sub-continent of South Africa.

The whole town was decorated and illuminated on this and the subsequent days of the visit. On the afternoon of our arrival the Mayor gave a garden party, at which my officers and I made the acquaintance of the leading citizens, and a banquet followed in the evening at the City Hall in honour of their visitors. Mr. de Waal and several members of the Cape Ministry, Mr. J. T. Molteno, Speaker of the House, Mr. Hofmeyr, the veteran leader of the Bond, were all present, and General Sir Reginald Hart represented the sister Service. In proposing the health of the guest of the evening, the Mayor remarked that, as the four ships of the squadron steamed into the waters of Table Bay, they seemed like bearers of a fourfold message from the Mother Country—the magnificent message of power, protection, peace, and prosperity, delivered at the door of South Africa, at a time when the daughter country was able to appreciate heartfully its comforting assurances. My response, I hope, did justice to the cordiality of this welcome, and I ventured to say that if ever South Africa was in danger from without, possibly the *Good Hope's* guns might come as a message of peace as truly as the presence of myself and my officers there did that night.

Capetown did its best to overwhelm us all, officers and men, with its brisk hospitality; our few days' so-

journ were crowded with festivities and excursions. On the eve of our departure, I gave a ball on board H.M.S. *Good Hope,* which brought on board every one of any note in the colony.

The send off accorded to the squadron the following afternoon was a remarkable one. Ministers and financial magnates, generals and diplomats, crowded on board until the last moment, as if loth to leave the flagship of the squadron which had brought such a wave of gaiety into Capetown.

As the *Good Hope* rounded the breakwater, turning broadside on to the spectators ashore, I sent a farewell message to the people of South Africa in the following terms:—

> "The last hawser that tied us to South Africa is now hauled ashore, and with regret we say good-bye; but if it is true that to dwell in the hearts of those we love is not to be parted, then you are still with us. We leave with you every good wish for closer union and prosperity, and we take with us an appreciation of your kindness and hospitality, which, if compared in height, would top Natal's aasvogel's nest; if compared in depth, it rivals the deepest gold mine in the Transvaal. In breadth it is as boundless as the rolling plains of Orangia, and in stability it will remain as does Cape Colony's majestic Table Mountain, which now looks down on us, and which we shall continue to see when Cape Town is lost to sight, but remains to memory dear."

Seven days at sea brought us to St. Helena—a week of quiet routine which was perhaps no bad thing for both officers and men after all the excitement and late hours of the previous week. The Governor of the island, Lieut.-Colonel Henry Lionel Gallwey, did everything possible to make us welcome, and invited several officers to make Government House their home until their depar-

ture, an exceptional mark of kindness, which was all the more appreciated as no hotel existed in Jamestown. The squadron sailed on the 22nd November for Rio Janeiro, at five p.m., the following signals being exchanged just as the ships were getting under way:—

From H.E. the Governor, to R.-A. Sir Percy Scott.

"Good-bye; sorry to lose you; may good luck always go with you and your squadron."

Reply.

"Thank you very much. We are very sorry to leave you, and hope to return to assist in commemorating the success of the flax and lace industries which your Excellency has so successfully started. We wish good fortune to St. Helena."

Eight days later the *Good Hope* and her consorts entered the harbour of the Brazilian capital—one of the finest as well as one of the most beautiful in the world. It was here I learned of my promotion to Vice-Admiral, and my only feeling of regret was the prospect of separation from the squadron which I had commanded for so many pleasant months. Not long after came the announcement of the appointment of Rear-Admiral Hamilton as my successor.

Rio is now one of the healthiest large towns in the world, and its death-rate is no greater than that of London or Paris. Many of the officers and men had been revaccinated on the journey out, but it was found that smallpox was so little to be feared in Rio that the precaution might have been omitted without any real danger to the health of the squadron. Rio is indeed in every sense a modern city, whose inhabitants call it, not without some reason, the Paris of South America.

The Brazilian Government and the resident English community had drawn up a splendid programme for our entertainment. Many officers of the Brazilian Navy had recently been to England, and the cordiality they showed to the English sailor-men was one of the most remarkable features of the visit.

The round of festivities opened the day after the squadron's arrival with a picnic to Petropolis, organised by the British committee, foremost amongst whom were Sir Milne Cheetham, the acting Chargé d'Affaires in the absence of the Ambassador, Mr. Bax Ironside, and Mr. A. W. A. Knox Little, Managing Director of the Leopoldina Railway. Those who went to the picnic were taken by steamer for about an hour to a landing place on the coast where the rack railway starts up the mountain on which Petropolis is situated. Once on board, the British officers were introduced to several of the Brazilian and English ladies who were waiting for them. Acquaintanceships were soon struck up, and the Brazilian naval officers present did all in their power to make the newcomers feel thoroughly at home. The entire outing was, in fact, enjoyable in the highest degree, and gave all who took part in it a very warm impression of the hospitality of the Brazilians.

The chief feature of the next day's programme was another picnic, this time to Corcovado, a lofty eminence which forms as effective a background to Rio as the Peak does to Hong Kong. A rack train took the guests to the summit, from which the view is one of the finest in the whole world. On this occasion our hosts were the Brazilian Navy—destined, as who could have dreamed then? to become our Allies in the Great War—and at the luncheon Admiral Maurity referred to the old friendship existing between the two Navies, and to the fact that it was an Englishman, Admiral Lord Cochrane, who was

the first Admiral the Brazilian marine ever had. I thanked our host in a similar strain, assuring him how enchanted we were with the warm welcome which had been extended to us. The ball given that evening at the Monroe Palace by Sir Milne Cheetham and his wife, who was a perfect hostess, will long be remembered in Rio as one of the most brilliant entertainments ever held there. On Sunday morning the President of the Republic came on board the *Good Hope* with Admiral Maurity to make a call of ceremony. The ships were all dressed to receive him, and when he left, after making me a few kind remarks, a fitting salute was fired in his honour. The following day I held a reception on board the flagship, to which about six or seven hundred visitors came, and twenty-four hours later the four ships got up anchor and steamed off amidst cheers from the Brazilian ships in the harbour.

My farewell message to Brazil will serve to convey an idea of the unstinted hospitality showered on the squadron during its stay at Rio:—

> "With regret we have to say good-bye to Brazil, whose warm welcome to the squadron has been so thoroughly appreciated by the officers and men, and will, if possible, tend to strengthen the feelings of cordial friendship which already exist between Brazil and Great Britain, two nations whose greatest ambition is peace. The Brazilian Fleet has from time immemorial been associated with English naval officers, and we are therefore much interested to see the great progress it is making, and to learn that it will shortly be augmented by three of the largest, most heavily armed, and most modern ships in the world. We are grateful to the Republic for the honour the President did us in paying a visit to the squadron, an honour which will be fully appreciated in England. It has been a great pleasure to have pointed out to us the improvements that have recently been made in

the capital, and the activity which is still displayed in the direction of progress points to Rio de Janeiro being in the near future the most beautiful city in the world. We leave you with every good wish for your welfare, and take away with us an ineffaceable recollection and appreciation of the beauties of your country, and the hospitality of the inhabitants."

On Saturday, the 12th December, the squadron anchored about five miles from Monte Video, and this distance throughout the stay made it a matter of time, and in rough weather of much difficulty, getting to and from the ship. The ships at once began preparing for coaling from the colliers which had come out from England in advance to meet them, and it was not until Monday of the week following that officers or men were in any condition to enjoy the liberal hospitality which was everywhere waiting for them. As at Rio, an entertainment committee had arranged a plan of campaign which ensured that every one had a good time, and the Government had put a large building near the landing-place at the disposition of the squadron as an information bureau, where the sailors could find out everything they wanted and get refreshments at a cheap rate. The President had also very thoughtfully arranged for several rooms at the Hotel Central to be occupied by any British officers who cared to stop ashore during the visit, so that a great number of them were able to enjoy all the comforts of first-class hotel life without the inconvenience of a bill to settle at the finish.

An official reception was given at the British Legation, on the afternoon of the 15th, by the Minister, Mr. (now Sir) R. J. Kennedy. The President of Uruguay, Dr. Williman, attended, and the visitors were in turn presented to him. Dr. Bachini, the Minister of Foreign

Affairs, then made a speech, in which, in the name of the President, he cordially welcomed the arrival of such a powerful British Fleet in Uruguayan waters. By its presence England showed her interest in a young South American nation, which offered no attraction but that of having utilised in her progress the intelligent initiative and trained energies of English pioneers. The great warships brought the homage of England to a minor member of the international family, and were a testimony to the grandeur of those who sent them, for it was as if, after having concluded the task of asserting the right, they travelled round the world as a reminder of the existence of that right and their determination to uphold it in the future.

I, in replying, noted with feelings of pardonable pride the highly complimentary terms in which his Excellency had alluded to the British Navy, and expressed my sense of the high privilege it was to command the squadron which had been sent to show the interest which the English people took in the welfare of Uruguay. I cordially agreed that the rank and right of a sovereign country depended, not upon its material size, but upon its moral strength.

Next day, a banquet was given by the Minister of War at Pocitos, an outlying suburb of Monte Video. The decorations were conceived in the most lavish style, and the table round which the guests sat was in the shape of an anchor.

I venture to quote the two principal speeches delivered on this occasion, not on account of their personal interest, but as illustrating the feeling of amity between Great Britain and this young Republic, which the visit of the squadron without doubt helped to foster. The Minister of War spoke as follows:—

"Mr. Admiral and gentlemen, the ties which unite us to the noble British nation are so great and numerous that it is a grateful task to me to express in the name of my Government the keen satisfaction which we have felt in being able to offer Uruguayan hospitality to the brave and distinguished members of its glorious Navy who honour us with their visit. And this satisfaction, gentlemen, is explicable, because from the commencement of our history England has exercised a beneficent influence in our destinies; we have always found in her a generous nation, disposed to encourage the great efforts and beautiful manifestations of the incipient national life, and at this happy moment it may be recalled that it was the country of the world's Powers to recognise the independence of the River Plate States when we had conquered in loyal struggle the right to be free. Even before, in the time of trial, when Artigas, with his diminutive bands, fought in the open country without further hope for the triumph of his ideals than the risk of life or death offered to the motherland, it was an English mariner, the commander of a warship at whose masthead floated the crimson banner that the roar of the cannons has saluted in innumerable naval victories, who signed with the Uruguayan chieftain, thereby virtually recognising our autonomy, a convention, which may rank as the first treaty of our national Chancellory. When the sovereignty of our country was threatened by the tyrant Rosas, we found in England a powerful ally, because, just as she loved liberty for her own sons, so did she also desire it for all the peoples of the earth, ostentating among her blazons the legitimate title of the destroyer of human slavery. In the development of this portion of American land, in the advance towards the summit of progress, on the road to which we walk with unswerving faith, trusting in the action of work and the treasures of the soil, England has a considerable and most important share; the genius of her sons and her capital has transformed the Republic, has threaded the territory with railways and tele-

graphs, has raised colossal works of engineering over her rivers, has populated the lands with breeding farms, has introduced the races of live stock that constitute our present animal wealth, and has carried the powerful impulse of progress to all corners of the country and to all branches of production and labour. We might almost say that it is to British capital that we owe the victory in the peaceful struggles of advancement, daily incorporating new progresses, until there is to-day presented the beautiful picture of general prosperity which we are able to offer the world, and that stimulates us to pursue in order, in legality, and in labour, the noble task of opening this land to the efforts and intelligence of all well-intentioned men who seek her own welfare. The English who share our national life well know that the Uruguayans are their sincere friends, that our sentiments towards them are fraternal, and that, whilst we admire the grandeur of the United Kingdom, we also admire the creative power of its sons, propagators of civilisations throughout the world. Gentlemen, to the glory of the British Navy, and to the health of the Admiral and of his distinguished companions in arms."

My reply was in the following terms:—

"Your Excellency and gentlemen, on behalf of the captains, officers and men of the squadron under my command, I beg to return to your Excellency my most sincere thanks for the kind reception and unprecedented hospitalities that have been accorded to us by the Government of Uruguay and by the citizens of Monte Video. I beg to thank your Excellency for the kind way in which your Excellency has referred in your speech to the British Navy.

"Your President granting me and my officers an audience is an honour that will be fully appreciated by my country. I thank your Government for sending out the *Montevideo* to sea to meet my squadron with a signal of welcome flying at the masthead.

Through the courtesy and kindness of your Government I have had an opportunity of inspecting the extensions and improvements that are being made to your already magnificent harbour, and of seeing your splendid public buildings and your great commercial industries. I have noted that your scientific and charitable societies, your National University, your compulsory education, your excellent police and general organisation, are all of the most modern character, and compare favourably with any city in the world. These advantages, combined with a perfection of climate, are no doubt the foundation of Monte Video's great commercial activity and popularity.

"This Banquet to-night, in grandeur, in floral decoration, in taste of illumination, in harmony of colour and in perfection of all the attributes of a banquet, eclipses anything that I have seen before. It will be remembered by us as a most striking example of the princely magnificence of Uruguayan hospitality. Your Excellency's table has, I observe, been arranged in the form of an anchor. May I be allowed to congratulate your Excellency on this happy idea, for it is emblematical of the firmness with which the memory of your hospitality will be forever embedded in our hearts.

"Again I thank your Excellency, and crave your permission to raise my glass and drink a bumper toast to the Government and the people of Uruguay."

I was subsequently able to entertain my host in the *Good Hope,* and also the French Minister Resident, M. Kleczkowski, who had previously invited me to lunch as a proof of the Anglo-French friendship then happily existing. On the 17th, a large reception was also held on my flagship, similar to the one at Rio, and hundreds of Uruguayans came out to enjoy the squadron's hospitality.

It was at this point in the tour that I sailed in the *Pelorus* to Buenos Ayres, where, after an official recep-

tion by the Argentine Naval Authorities, I dined with the Minister of Marine at a banquet given in his honour. Most of the time of my short stay in the capital of the Argentine Republic was spent in driving about in motor-cars and inspecting the various sights of this splendid city—the largest south of the Line. The night before leaving I gave a farewell dinner at the Jockey Club to the officers of the Argentine, Swedish, and Italian Navies whom I had met during my visit. The evidence of the Republic's progress and prosperity had greatly impressed me, and it may be of interest to reproduce the speech I delivered on this occasion as a succinct record of my impressions:—

"Your Excellency and gentlemen, as to-night closes our stay in your magnificent capital, I take the opportunity of expressing my warmest thanks to your Excellency for the great hospitality and kindness that have been shown to us by the Government of Argentina and by the people of Buenos Ayres. I hear that, as an assurance of peace which is so necessary for industrial development, your Government has decided to add to your Navy ships of magnitude and power second to none in the world and in keeping with the wealth and grandeur of your country. It is many years since I visited your city, and it has improved beyond all recognition. Your Mayor has been kind enough to drive me round a large portion of the city, and I am lost in admiration of what I saw.

"Taking first your port: when I came here before there was scarcely a pier to land at; to-day I steamed through acres of basins accommodating hundreds of large steamers of every nationality. Such a sight brought home to me the enormous commercial enterprise of your country, its wealth and its importance. I saw the wool, grain, and cotton industries, all demonstrating the resources of Argentina. In grain I learn that last year you exported over 3½ million tons of wheat and over a million tons of linseed, whilst

maize reached nearly two million tons, and oats nearly half a million. For the current crop I hear that even larger figures are expected. There seems to be no doubt that ere long Argentina will be the greatest exporting country of the world for cereals. My visit to-day to Vicente Casaras gave me an idea of the magnitude of your cattle industry and the excellence of the stock, most of which I am glad to hear, derives its origin from my country.

"Turning to your city, I was driven through miles of splendid avenues ornamented by buildings which, in splendour, rival any in the world, and your Mayor pointed out how in every street the people moved with the alacrity which marks business energy. Among other things which indicated the wealth of the country I was shown 30 millions of coined gold, 20 millions of which was in English sovereigns. Your hippodrome with its treble racecourse, your rifle ranges, your golf links, and this wonderful Jockey Club, all show how much sport is appreciated in Argentina. Your Mayor afforded me the pleasure of seeing your Opera House, a building of which I have never seen the equal, and as marking the appreciation of music in the Argentina I am informed that a box at this opera for the season costs £900 sterling. I have also been taken to the Park at Palermo, where I saw the wealth of magnificent horses and carriages, and in those carriages, if I may say so, the most beautifully dressed and lovely ladies that I have ever seen in the world.

"These, your Excellency and gentlemen, are the impressions I shall carry back with me of Argentina and Buenos Aires. I drink to your Excellency's health, and thank you for doing me the honour of dining with me."

The day after my return to Monte Video, Dr. Williman, the President, and the Uruguayan Ministers came off to lunch on board the *Good Hope*. As the President expressed his astonishment at the enormous range of

modern artillery, I arranged on the spot for him to fire himself a full charge from the 9.2 gun, which he did by touching a button, and had the satisfaction of seeing the splash of the projectile rise from beyond the horizon. It wanted but three days to Christmas, and Dr. Williman, deploring that the sailors should have to spend it at sea, begged me to stay at Monte Video until after the 25th. As a result of this kindly invitation, a telegram was despatched home to H.M. the King, at the request of the President of Uruguay, and, shortly after, a gracious reply came in accordance with the latter's wishes. During this extension of the visit, the hospitality of the residents went to even greater lengths than before, and it was generally felt that the good relations between England and Uruguay had been enormously strengthened by such a fine squadron showing the flag in a port where there is a large English colony. Showing the flag occasionally in a splendid fighting squadron like this is in fact more effective than when it is seen in a small craft of no fighting value.

We left for St. Vincent and proceeded to Teneriffe, where we remained for three days. No sooner had we anchored than invitations to various entertainments began to pour in, and nothing could have exceeded the warmth of our reception.

The many kind invitations issued by our hosts at Santa Cruz, combined with the shortness of our visit, prevented any entertainment on the part of my squadron, but I gave a large dinner party, at which both the civil and military Governors, and most of the leading residents, were present. The British Consul was most kind in every way, both officially and socially, and the good relations obtaining between the local authorities and our representative were most apparent.

From Teneriffe the squadron proceeded direct to Gibraltar, where at once preparations were begun for battle practice, and every one realised the value of the various gunnery exercises carried out during our long cruise. Among the exercises we devoted a great deal of time to night-firing practice, which had never been properly provided for by the Admiralty. We had used searchlights in the Navy for forty years, and had known that the operator at the light could not put the beam on to the object as the glare made it invisible. The operator had consequently to be "conned."[1] The primitive method was for an observer, who could see the object, to shout out "go right" or "go left" or "up" or "down," with an occasional "you —— fool, you've gone too far." We improved upon this method by using wires and wheels, and so transferred the actual manipulation of the light to a point whence the operators could see the object. The system worked excellently. I reported it to the Admiralty, and they promptly boycotted it, so that when war came six years afterwards we had no device of the kind and the primitive method of shouting was still being used. Several ships, however, with their own artizans copied the *Good Hope's* method.

The battle practice took place at Tetuan on the 10th February, 1909, and we used our extemporised director firing. It was a great success, and clearly demonstrated that all our ships should be fitted with this description of firing. The Admiralty, however, took two years before they ordered it to be fitted to H.M.S. *Neptune*.

On the 15th February, 1909, I transferred the command to Rear-Admiral Hamilton, and proceeded to England, accompanied by my staff, in the Orient mail steamer.

[1] To "con" is the sea term for to direct.

I was given a very warm send off by the officers of the squadron, and I do not hesitate to say that I believe I took with me the sincere good wishes of all hands under my command.

CHAPTER XV

VICISSITUDES OF DIRECTOR FIRING

My New System of Routine—Approved by Lord Fisher but generally Opposed—What Naval Gunnery means—No further Employment at Sea—Back to Director Firing—Success of the *Neptune* Trials—The *Thunderer* and *Orion* Test—Superiority of Director Firing demonstrated—More Admiralty Delay and a Stiff Protest—Warning unheeded and Proposals rejected—Tragic Fruits of Neglect—History of Parallel Firing—Position of the Director Firing at the Outbreak of War—The First Dreadnought—Position of the Mast—Perpetuating a Blunder—Mr. Churchill's Wise Decision—A New Blunder in Exchange for the First.

On my arrival in London after transferring my command, I saw the First Lord, Mr. McKenna, and the First Sea Lord, now Lord Fisher of Kilverstone. As already described, I had introduced a new routine in the Second Cruiser Squadron, economising the time which the men spent on housemaiding duties, in order to obtain further opportunities of training them in their war duties. The First Sea Lord, who was then completing the series of naval reforms which were to save the Fleet from defeat and the Empire from ruin, discussed the new routine I had introduced. He approved of the modifications I had made, but added that I was far too much ahead of my time, and that my departure from tradition had caused a good deal of annoyance in some quarters.

Subsequently I had the honour of an audience with King Edward VII. He was much interested in the visit to South Africa, and desired me to explain to him the new system of instruction I had devised and its effects.

In the same year I was entertained by the Authors' Club in Whitehall Court, and I took advantage of the occasion to endeavour to indicate in proper language

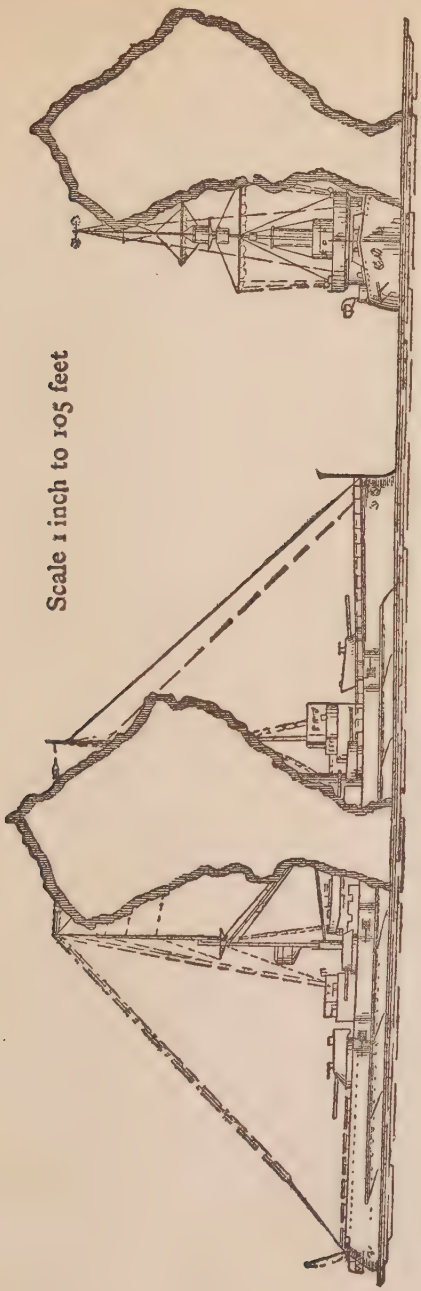
what was really meant when reference was made to "naval gunnery." Sir James Rennell Rodd, then the British Ambassador at Rome, who was in England, had delayed returning to his duties in order to preside. We had met twenty years before, and his presence added to my enjoyment of the evening. As I have not given in these reminiscences anything in the way of a popular account of what "naval gunnery" really implies, I recall the salient part of this little speech of mine:—

"Hitting with heavy guns is a subject to which I have given some attention, but it is not quite easy to talk about it except to my brother officers, as naturally some of the most interesting points in connection with it are confidential. I can tell you some of the difficulties with which we have to contend, but I cannot, in all cases, tell you how we overcome them. Gunnery is a term that I do not much like, as it has often been used unassociated with hitting. Hit first, hit hard, and keep on hitting is what we have to do if we want to win. Strategy and tactics count for nothing if we cannot hit; the only object of a man-of-war is to hit.

"Taking first the weapon—our most modern naval gun is just double the length of this long room, weighs 60 tons, will penetrate eight inches of armour at thirteen miles, strikes a blow of 53,000 foot-tons, and costs about £100 every time you let it off. Its shot is six times my weight, in circumference it is what I am round the chest, in height it is four inches shorter than I am. The home for this projectile is the enemy. The art of gunnery is to get it to that home. To arrive at that we point the gun at the moment of firing at a certain spot—that spot is not the spot that you want to hit; the gun must be pointed high, so as to counteract the effect of gravity. The wear of the gun, the temperature of the air, the density of the air, the strength and direction of the wind, must all be taken into consideration when settling where you

are to point the gun; wind is a difficult factor to deal with, as it may be blowing at different strengths, and in different directions, at the various altitudes through which the shot passes. In firing at a range of fifteen miles, which is possible, the shot would go to an altitude of 22,500 ft., which, if my geography is correct, is 7,500 ft. over the summit of Mont Blanc. You will realise what a variety of atmospheres it would pass through, and how impossible for any one on earth to divine what will be the direction and the force of the winds it will meet with in its ascent and descent. When a mass of iron the size of my body has to pass even five miles through the air you may imagine what a difference wind behind it, or in front of it, or right or left of it, will make in its final destination.

"I have not come to the end of our troubles yet. When firing at a range of five miles, which is about what some nations practise at now, the shot takes 12 seconds to get to its destination; during that time the ship it is being sent to, if steaming at the rate of twenty knots, will have changed her position 120 yards. We must point our gun in a direction which allows for this. Then there is the forward movement of your own ship, which will be imparted to the projectile, and must be allowed for, and there are other corrections to be applied. To hit under these circumstances will appear to you a very difficult problem, and it is. We only expect to get our first shot approximately near; if we succeed in this, then the remainder is fairly easy. The same rule governs hitting at five miles that governs shooting across this room—you look where the shot has gone and correct your aim accordingly by pointing the gun more up, or more down, or more to the right or to the left. If you have not seen much heavy-gun practice at sea, you may wonder how we can at five miles see the splash made by a shot striking the water. The answer is very simple—the column of water thrown up is larger than a battleship. Here is a picture of a battleship showing the splash made by a projectile



The Splash of a 12-in. Shell.

superimposed on it. Both are the same scale. You will observe that the splash is higher than the battleship's mast. I estimate that it contains about 2000 tons of water; such a splash would drown a small ship.

"Having determined where the gun is to be pointed, the next question is how is it to be done? Two men are employed, each looking through a telescope; one has a wheel for controlling the direction of the gun in azimuth, the other a wheel for controlling the elevation. As the ship is never steady, but always has a certain amount of roll, the task these two men have is not easy, but by much practice a union between the eye looking through the telescope and the hand on the wheel is established. As the ship moves, so they instinctively move their wheels to counteract it—in the same manner that one's hand moves the handle-bar of a bicycle.

"We have now got as far as pointing the gun, and that if you do not hit you correct your aim until you do hit. Here another difficulty comes in. In firing at a target across the room, we can see if we have made a bull's-eye—at a longer distance on a rifle-range if we make a bull's-eye it is signalled. In naval warfare at the distance we engage at we cannot see whether we have hit or not, and we cannot expect the enemy to signal to us that we are hitting. He may intimate to us that we are hitting by running away, sinking, or catching fire; but we want an earlier intimation of hitting than this, and we get it—but the method I cannot disclose.

"That we are able to master most of the difficulties to which I have referred is proved by the fact that we now make a higher percentage of hits at 8000 yards than we did a few years ago at 1000 yards."

Shortly after I had left the *Good Hope* the director-firing apparatus which I had taken such infinite trouble to instal in her was put on the scrap-heap, and with it my routine for training men for war. I heard that the

Admiralty did not approve of any departure from their (unsatisfactory) system[1] of firing, and that the fact of holding the views I did on the question of routine would be a grave objection to my further employment, as my opinions would be sure to clash with those of my superiors, who had no wish to abandon the routine followed by the Fleet with little alterations since the sail era.

About this time the Admiralty suggested to me that I should probably not hoist my flag again, and that I should be doing more service to the country by continuing my work on director firing than by going to sea. The irony of this assurance appealed to my sense of humour, for I well knew that the Admiralty, as a body, were moving heaven and earth to prevent director firing being adopted.

Nevertheless, fully realising that I was relegated to half-pay, I busied myself about this special work. The invention had been on the shelf at the Admiralty for six years, and was strenuously condemned by those who had not taken the pains to study its possibilities, or even to understand it. Fortunately for the country, Sir John Jellicoe was now a member of the Board, being Controller of the Navy, and he decided to fit it in H.M.S. *Neptune*. In conjunction with Messrs Vickers, I prepared drawings, which I took to the Admiralty in June, 1910. They were approved, the work on them was started, and in December, 1910, the installation on board H.M.S. *Neptune* was completed. About the same time the Admiralty realised that, though I had been working on this scheme of director firing for more than a year, I had received no pay for so doing. On the 14th June their Lordships wrote to me to the effect that they were pleased to appoint me on committee pay while associated with the Admiralty in connection with director firing.

[1] They really had no system.

Before passing on, I should refer to my flying visit to Mexico. In March, 1910, I received an invitation to travel from New York to the city of Mexico and back in a special train, which would stop at all the places of interest *en route*. In Mexico I was to have the honour of being presented to the President, General Porfirio Diaz. That prospect quite settled the question; I accepted with pleasure, for I had always regarded General Porfirio Diaz as one of the most wonderful men in the world.

From the conquest of Mexico by Cortes in 1520 to the death of Maximilian in 1867, the country of Mexico had been in a constant state of war, either driving out invaders or coping with internal revolutions, the latter chiefly brought about by the greed of the Church. With the death of Maximilian and the evacuation of the French, all foreign interference ceased, and the Mexicans began to govern themselves; but it took ten years for them to find a man with a sufficiently iron will to exterminate the clerical greed for power and plunder, and to stamp out the brigands that infested and ruined the country.

In 1877, General Porfirio Diaz seized by a bold coup the reins of government, became President, and practically remained in office for thirty years. This long rule made a new era in Mexican history. With firm hand Diaz suppressed all brigandage and attempts at revolutions; peace was maintained; foreign capital flowed into the country, and with it came prosperity and a commencement of development. I say a commencement, because up to the time of my visit the natural resources of the country had only been scratched, and a vast area was still unexploited.

It was apparent to me that there was nothing that the country would not either grow or yield. Even in my short tour I passed through land rich in oil; I saw

gold mines, silver mines, copper mines, precious stone mines, and was told that there was an abundance of every metal. As regards agriculture, everything seemed to grow; even the desert where one saw nothing but sand dotted over with cactus trees only wanted water on it to change it into the most productive soil. After passing over hundreds of miles of desert, we emerged on to a plateau of rich soil, where fruit of every description was growing in profusion. It was the same desert, but it had been watered by an irrigation company then recently started by President Diaz.

From my visit to Mexico, seeing it as I did in prosperity and with almost unlimited possibilities, I came to the conclusion that it would become the richest country in the world, and I was naturally very anxious to meet the man who had changed it from a country of bloodshed and brigandage to one enjoying peace and prosperity, and who had started the development of its resources and riches.

On the 29th March, 1910, at the Palace in Mexico City, I had the honour and pleasure of being presented to General Porfirio Diaz. He was then nearly eighty years of age, but did not look more than sixty. A short, dark man, with a wiry and well-knit figure, he had very Indian features and piercing black eyes. He looked the sort of man who could rule any one. I was told that he was the son of an innkeeper and that his grandmother was a pure Indian of a Mexican tribe who were renowned for the beauty of their women and the savageness of their men.

With advancing age, his iron will (so necessary in Mexico) relaxed, the revolutionists became active, and Diaz was compelled to retire from the Presidency and leave the country he had hardly ever been out of during the eighty years of his life.

President after President succeeded Diaz, but they only acted for a sort time, assassination or resignation terminating their periods of office, and the country soon fell into a worse state of brigandage than it had ever been in.

Later on the control of Mexico fell into the hands of two men, Villa and Carransa, whom it would be gross flattery to call brigands. Under their rule atrocities obtained as bad as those committed by the Germans during the War; the city of Mexico was pillaged; civilians and priests were murdered; and the nuns in the convents subjected to unmentionable treatment.

I took an interest in Mexican affairs, because during my visit I formed such a favourable opinion of the possibilities of the country that I invested money in their railways and other enterprises. With the exit of Diaz, what he had accomplished in thirty years was quickly undone and the country ruined. It is a mistake to suggest that the rule of Porfirio Diaz was one of terror only. The Mexicans certainly feared him, but at the same time they loved him; he had brought prosperity to them. He was a valiant warrior and a fine statesman; he knew men and how to manage them, and he feared nothing. He was the strong man that Mexico wanted and that England wanted badly during the war. This wonderful man, the maker of Mexico and Mexico's truest patriot, died an exile in Paris on the 2nd July, 1915, in his eighty-fifth year.

In January, 1911, I joined H.M.S. *Neptune* to superintend the trials. A month was spent at Aranchi Bay, Sardinia, in testing the instruments and in educating the officers and men in their use. On the 11th March, 1911, at Gibraltar, the final trial took place, and proved most successful. At a subsequent interview at the Admiralty, Mr. McKenna, then First Lord, remarked that

the *Neptune* had attained such a rapidity of fire that she would expend all her ammunition in thirty minutes, which would never do. I pointed out that if the shells hit their targets the enemy might be sunk in thirty seconds. This was a view of the matter which was apparently new to him.

Sir John Jellicoe, who by that time had taken up his appointment as Commander-in-Chief of the Atlantic Squadron, was present at the trial, and on the strength of it he advised the Admiralty to fit the director to all ships at once. This the Admiralty were reluctant to do, and they were supported in this opposition by Admiral Sir Francis Bridgeman, then Commander-in-Chief of the Home Fleet, and flying his flag on board H.M.S. *Neptune,* the only ship in which it had been tried. Matters were thus delayed a great deal, and it was not until late in the year that orders were given for the *Thunderer* to be fitted.

Mr. Winston Churchill, who had become First Lord, informed me that he was determined that the system of firing should be given a fair trial, and asked what I thought would be the best way to arrange it. I suggested that the Admiralty should tell off a ship similar to the *Thunderer,* and that they should go out together and fire at separate targets, thus ensuring the same conditions of wind, light and weather for both ships. Mr. Churchill considered this a fair and sporting offer, especially as it left the Admiralty the power to choose their best ship and one which had been longer in commission than the *Thunderer.*

There were many delays and changes in the programme, and it was not until November, 1912, that the final trial came off. The Admiralty selected the *Orion;* she had been nine months longer in commission than the

Thunderer, and had the reputation of being the best shooting ship of the Navy.

On the 13th November the Fleet, under Admiral Sir John Jellicoe, steamed out of Bantry Bay into the Atlantic, and the two competing ships were placed in position:

Target.	*Target.*
Thunderer.	*Orion.*

The range was nine thousand yards, the ships were steaming at twelve knots' speed, and the targets were being towed at the same speed. Immediately the signal was made to open fire both ships commenced, the *Thunderer* making beautiful shooting and the *Orion* sending her shot all over the place. At the end of three minutes "cease fire" was signalled, and an examination of the targets showed that the *Thunderer* had scored six times as many hits as the *Orion.*

The superiority of director firing was thus demonstrated, and the country has to thank Sir John Jellicoe and Mr. Winston Churchill for its introduction into the Navy. Had they not intervened, the opposition to it would still have been maintained, and we should probably have gone to war without any of our ships having an efficient method of firing their guns.

I cannot omit quoting in this connection a passage from Lord Jellicoe's book.[1] He there says that—

> "A great extension of the system of director firing, by which one officer or man could lay and fire all the guns, was made. The situation in this respect before the War was that a few ships had been fitted for the system which had been devised by Admiral Sir Percy Scott. But a very large number of officers were sceptical as to its value compared with the al-

[1] "The Grand Fleet, 1914-1916."

ternative system; there was considerable opposition to it, and the great majority of the ships were not fitted. In some cases the system was not favoured even in the ships provided with it.

"It had fallen to my lot in 1912 to carry out competitive trials of the director system and the alternative system already in use, and the results of these trials had fully confirmed me in my previous opinion of the great value of the director system. I was able to press these views on my return to the Admiralty at the end of 1912 as Second Sea Lord, and it was then decided to provide all the later ships with the arrangement. Little progress had, however, been made when the War broke out, only eight battleships having been fitted.

"Early in 1915 arrangements were made, with the assistance of Sir Percy Scott, and the warm support of Lord Fisher, then First Sea Lord, by which the battleships and battle cruisers were supplied with this system, without being put out of action or sent to a dockyard for the purpose. The necessary instruments were manufactured at various contractors' shops, and the very laborious task of fitting them, and the heavy electric cables, on board the ships was carried out by electricians sent to the various bases. The complicated work naturally took a considerable time, and many vexatious delays occurred; but gradually all ships were fitted, Sir Percy Scott rendering invaluable assistance at headquarters.

"As a first step, the system was fitted to the heavy guns mounted in turrets, and by the date of the Battle of Jutland there were few ships that were not supplied with the system, although six of those last fitted had not had much experience with it.

"The conditions under which that action was fought converted any waverers at once to a firm belief in the director system, and there was never afterwards any doubt expressed as to its great value.

"Further efforts were made later to accelerate the work, and the system was extended to smaller vessels. This had been the intention even before the ac-

tion, but there were then still many who were unconvinced. However, during the remainder of 1916 and 1917 the work was pressed forward, and the system became universal for all guns and in all classes of ships."

When Lord Jellicoe refers to "few ships" being without the director firer at the Battle of Jutland, he is dealing only with the main armament.[1] The work of completing the equipment of the Fleet, main guns and secondary guns, had not, indeed, been finished when the Armistice was signed.

It was after the Agadir scare in 1911, when we nearly went to war, that my anxiety about the Fleet became acute, for I well knew how terribly deficient we were in gunnery, and what great strides the Germans had made in that direction since my visit to Kiel in 1905. Accordingly, on the 11th December, of that year, I wrote to the Admiralty as follows:—

"The Germans, I am informed, have for some years used a very good modification of the Director System, which allows them to fight the guns of their ships in parallel. As we cannot do this efficiently, it gives the Germans such a superiority in gun-fire that if a British Fleet engaged a German Fleet of similar vessels, the British Fleet would be badly beaten in moderate weather, but annihilated if it was rough.

"I make this statement with profound regret and concern for my country, but no one with any knowledge of the modern conditions of shooting can contradict it.

"For six years I have urged their Lordships, the Commissioners of the Admiralty, to adopt a system of fighting the guns in parallel; had I not done so, and did I not continue to urge it, in the event of war

[1] Cf. "The Grand Fleet, 1914-1916," page 374.

I should feel myself criminally responsible for the defeat we should sustain if our Fleet engaged another Fleet in which the guns are fitted for firing in parallel."

This letter was tantamount to accusing their Lordships of jeopardising the safety of the nation, and I hoped that they would either try me by Court Martial for so indicting them or take some action which would give our ships a chance of success, if they had to fight an action in rough weather. Their Lordships did not like the kindly warning I had addressed to them, and they did *nothing*.

On the 10th February, 1912, I wrote another letter, making suggestions for improving the firing of the Fleet. Three hundred and seventy-three days after the receipt of this letter, that is, in February, 1913, their Lordships replied that it had been decided not to adopt my proposals at present. To me, a year and eight days appeared rather a long time for them to take in making up their minds, but at the Admiralty time was of no consequence.

Two years after these letters were written, in rough weather, H.M.S. *Good Hope* and H.M.S. *Monmouth* engaged the German armoured cruisers *Scharnhorst* and *Gneisenau*. The two British ships had no means of fighting their guns efficiently in such weather, so they were both easily annihilated by the German gun-fire, and every soul on board them went to the bottom. It was what I had expected, what I had predicted, and what I had strenuously tried to avert. Fifteen hundred brave officers and men were sacrificed because the Admiralty had not fitted the ships with any means for fighting their guns in a sea-way.

The Germans said that the shooting of the *Good Hope*

and *Monmouth* was very bad. No doubt it was, but this was no reflection upon the gunnery ability of Admiral Cradock and his officers and men. We may be quite certain that they bravely and skilfully fought the guns. Failure to hit the enemy was in no way due to want of skill; it was due to the ships lacking the necessary instruments to enable them to use their guns efficiently in rough weather. In a sea-way when a ship is rolling, there is only one method of effectively using the guns; they must be laid parallel and fired simultaneously as a broadside. To arrive at this, certain instruments are necessary. The *Good Hope* and *Monmouth* were without these instruments, and as a consequence they were unable to use their guns effectively against the enemy.

The principle of laying guns parallel and firing them simultaneously is not new; I was taught it in the first ship in which I went to sea. She was an old sailing frigate, armed with 64-pounder truck guns, but we could parallel our guns although the method used was somewhat primitive. When this description of firing was to be used, the captain of the gun stretched a line (called the convergence line) from the centre of the port to the rear, and held it vertically over a mark on the deck. Then the men, with handspikes and tackles, hove the gun round until the sights were parallel to the line. In this way all the guns of the broadside were placed fairly correctly for direction, and the allowance for convergence was introduced. For elevation a wooden batten was used, marked in degrees with a good open reading; the guns were laid by it and fired simultaneously by word of command.

From the foregoing it will be seen that half a century ago we could lay our guns parallel for direction and elevation, and fire them simultaneously as a broadside. This is exactly what we re-introduced into our Navy in

BROADSIDE FIRING WHEN I JOINED THE NAVY

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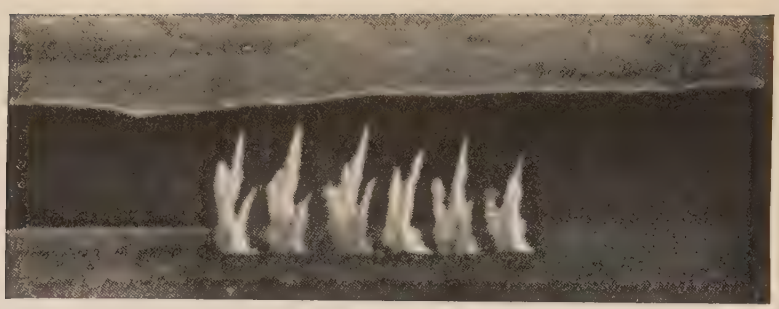

I.—FIRING BROADSIDES—THE FALL OF THE SHOT

II.—STRADDLING THE TARGET

III.—ANOTHER BROADSIDE

NAVAL GUNNERY

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1914. We called it by three names—Parallel Firing, Director Firing, or Broadside Firing by directing gun.

It must appear strange to my readers that we reintroduced in 1914 a system of firing that we had in the Navy fifty years before. The question naturally arises, if it was a good system, and if it was the only system by which guns could be fought when the weather was rough, why was it ever dropped? I will explain.

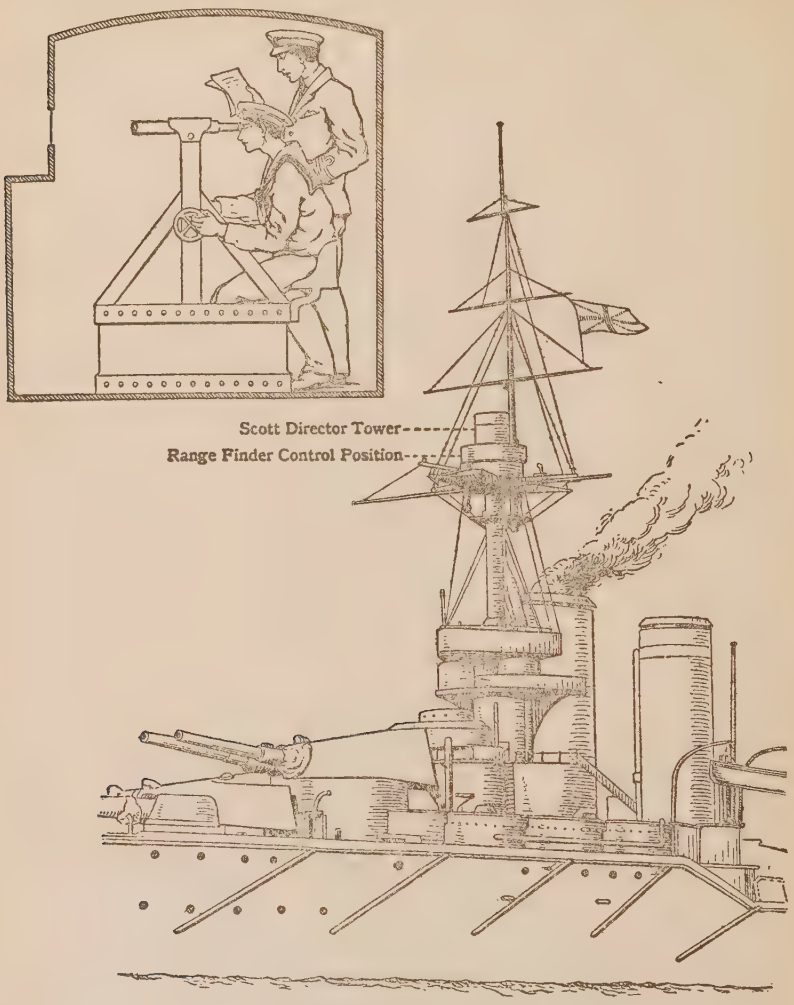
As the guns and mountings improved, so improvements were made in the converged firing arrangement I have already described. The introduction of electric firing enabled the guns to be fired from a position aloft, or remote from the guns. This caused director firing to be introduced, the director being a sort of master gun sight which was placed in some position from whence the officer operating it could obtain a good view of the enemy.

In 1885 a very excellent director was designed by Lieutenant R. H. Peirse,[1] but as we had no efficient communications, difficulties arose and this description of firing was given up, broadside firing by directing gun taking its place. In rough weather this was an exceedingly effective manner of firing simultaneous broadsides, and it was generally adopted by us and all foreign nations. It was such a good method of firing the guns that one would have thought it might have been kept secret, but a full description of it appeared in our drill book, which could be bought by any foreigner for a shilling.

In 1897 we commenced putting our guns into casemates, that is, a sort of armoured room; each gun was in a separate room and the communication between them was very bad. This precluded us from using broadside firing by directing guns. Consequently, after that date we had no form of parallel firing, which meant that we had no effective way of using our guns in rough weather.

[1] Afterwards Vice-Admiral Sir Richard Peirse, K.C.B.

It was to solve this problem that, in 1905, I revived director firing, and, owing to the great advance that had



Sketch view of the Director.

been made in electric communications, was able to devise a very good form of it, the details of which have been

kept secret. I submitted the invention to the Admiralty, who had it secretly patented, consigned it to themselves, and then boycotted it until 1911, when, as explained, Sir John Jellicoe insisted on H.M.S. *Neptune* being fitted with it.

The boycott for many years of this description of firing was not because the Admiralty were ignorant of its efficiency. It was boycotted simply from professional jealousy, and the boycott jeopardised the safety of the Fleet, which means the safety of the nation.

In 1906, shortly after the *Dreadnought* class of vessel had been introduced, it was found:

1. That they could not carry out a chasing action, as when at high speed the spray washed over the gun sights and prevented the men from seeing the enemy.

2. With the wind in certain directions the smoke from the foremost guns interfered with firing the after guns, and so prevented the ship from making full use of her armament.

These were two very serious and grave defects, for they materially reduced the power of a *Dreadnought;* and they obviously should have been eliminated if possible. The Admiralty had two courses open to them.

(*a*) To adopt director firing, which eliminated both of the defects named.

(*b*) To arrange that when practising for battle no right ahead firing took place, and that the target should always be in such a position as regards the wind that the firing ship was not inconvenienced by smoke.

The Admiralty adopted course (*b*), and as a consequence of this, for five years our officers and men were trained in a system of firing which could be effectively used only when the weather was fine and the enemy was met on a restricted bearing as regards the direction of the wind. In the meantime the Germans were fitting

all their ships with a system of firing very similar to director firing.

I mention the circumstance, not to expose the neglect of the Admiralty, but because I am writing a personal narrative. I was the pioneer of director firing, and to that fact was due the long delay in its introduction. In 1912 Mr. Winston Churchill decided that director firing was to be fitted in twenty-nine of our *Dreadnought* battleships and battle cruisers, but the Admiralty did not hurry. No start was made until 1913, so when in August, 1914, war was declared, the British Navy had only eight ships fitted. But what was most strange was that, when war came, work was stopped on the other twenty-one ships, and was not resumed until three months afterwards, when I returned to the Admiralty. The jealousy and quarrelling in Service circles in England during the War was a valuable asset to our enemies.

In 1904 the advantage of directing the fire of guns from aloft was apparent to all gunnery officers, and it was recognised by them that the only object of having a mast was, to give the officer in the ship an elevated position from whence to control the fire, and to carry a wireless.

In this year Lord Fisher's *Dreadnought* was designed. She was a sensational ship, representing the initiation of a new type. In tonnage, speed, and armament, she beat all battleships then afloat.

She was the first vessel to have all her guns of the same pattern. Her predecessors had mixed armaments; the ships of the *King Edward VII* class had 12-inch guns, 9.2-inch guns and 6-inch guns, and this made them very difficult to fight. The mounting of only one pattern of gun was a most important innovation as regards fighting efficiency, and Lord Fisher deserves great credit for having introduced it. But alas, when he left office some

years later he took his brain with him, and a brainless Admiralty started again to build ships with mixed armaments. Some of them were converted during the war, and then we started to build serviceable cruisers with one pattern of gun only, and all on the middle line.

The *Dreadnought* had the then wonderful armament of ten 12-inch guns, which, if properly equipped and handled, would have made her the most powerful ship in the world. But she was launched into the Fleet without a method of fighting the guns being considered, and to make matters worse the mast which carried the observation station whence the guns were to be controlled was placed abaft the funnel, so that the unfortunate officer controlling the firing of the guns would be roasted.

On one occasion, after the look-out man had gone aloft, the ship steamed at a high speed against a head wind, so that the mast near the top of the funnel got almost red-hot. The result was that the look-out man could not come down for his meals, and it was necessary to hoist food up to him by the signal-haulyards, which had luckily not been burned through.

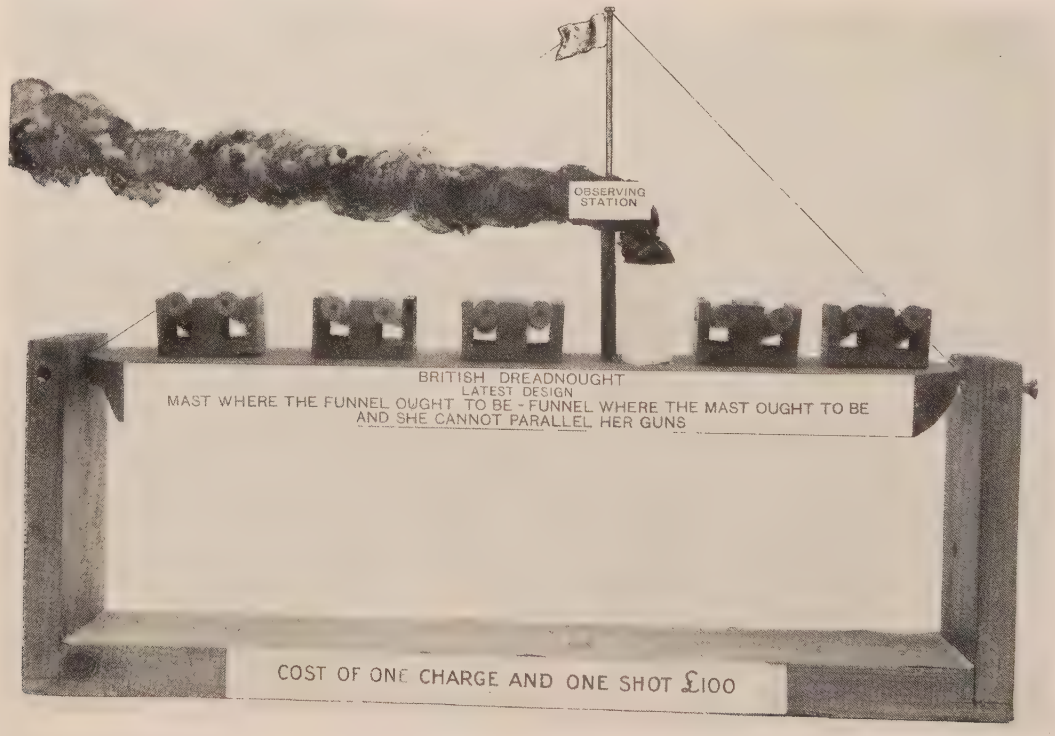
In the next class, the *Temeraire, Bellerophon, Superb,* and in the following class, the *St. Vincent, Collingwood,* and *Vanguard,* as well as the *Neptune,* this blunder was not repeated; the mast was put before the funnel, and the observation station upon it was therefore available for the purpose for which it was designed.

In 1907, when the vital importance of an aloft position for controlling the fire of the guns had been even more completely demonstrated, and we had elaborate range-finders and fire-control instruments aloft, I heard, to my horror, that the Admiralty intended laying down more ships with the funnel before the mast. Such a decision practically meant that the ships would be of no use for fighting purposes, *unless they went stern first*

into action. I took the liberty of pointing out this amazing blunder to the Admiralty, and got myself very much disliked for my pains. The Board of Admiralty were well aware of the blunder that they had made, but they wanted it hushed up, instead of being reminded of it. Mr. McKenna's reply was evasive. He said that the design of a ship had to embrace possibilities of which I was perhaps ignorant, and which were confidential. That was a ridiculous and absurd statement. What could be confidential so far as I was concerned? He could give me no reason for putting the mast in the wrong place! That was the fact to be concealed.

The position then was this: the *Colossus, Hercules, Orion, Thunderer, Monarch,* and *Conqueror* all had the funnel where the mast ought to be, and the mast where the funnel ought to be. To make matters worse, it was decided to repeat the blunder in the *Indefatigable, New Zealand, Lion, Princess Royal, Queen Mary,* and the *Tiger.*

I had a model made, and took it to Mr. Winston Churchill, who had succeeded Mr. McKenna in 1911, and explained the gravity of an error which we were going to repeat in the ships under construction. I pointed out to him that the only way to hit an enemy was to judge how far over or short the shots were, and to alter the aim accordingly—in other words, that the hitting power of a man-of-war depended mainly upon observation of fire. I further explained that the efficiency of the observation would depend upon two things: the personal ability of the observer and the height of the position assigned for him to observe from; that practically the all-important detail in the design of a fighting ship was the position of the observation station; that we were ignoring this fact and putting the observation station in a position


OBSERVING STATION
BRITISH DREADNOUGHT
LATEST DESIGN
MAST WHERE THE FUNNEL OUGHT TO BE - FUNNEL WHERE THE MAST OUGHT TO BE
AND SHE CANNOT PARALLEL HER GUNS
COST OF ONE CHARGE AND ONE SHOT £100

MODEL THAT I TOOK TO THE ADMIRALTY TO SHOW HOW THE OBSERVER WOULD FARE OWING TO THE FUNNEL BEING IN THE WRONG PLACE

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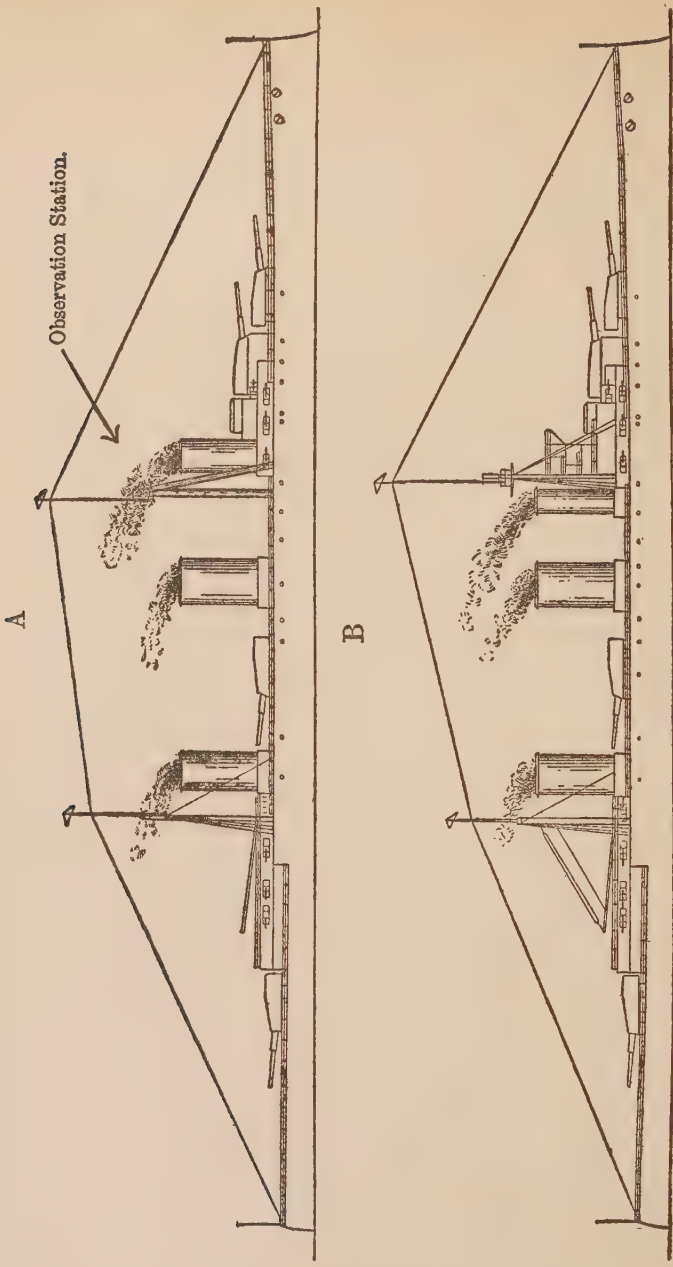
which made it actually untenable under most conditions of wind.

Mr. Churchill saw what a bad mistake had been made, and asked me what could be done. I replied that only one thing was possible—namely, to take the funnel and mast out and change their positions; and that would probably cost about £50,000 to £60,000 per ship. The First Lord, with his characteristic boldness, overrode the opinion of his naval colleagues and insisted upon this step being taken. This must always be a good mark for Mr. Churchill.

The first ship to be taken in hand was the *Lion,* and she was altered as shown on the following page—from "A" to "B."

This alteration made the observation station tenable under most conditions of wind, and it was so far satisfactory; but in correcting the one blunder their Lordships introduced another, which was worse than the one they were remedying. They took out the strong tripod mast, which was sufficiently rigid to carry a director-tower, and replaced it with a light one unsuitable for carrying the tower. To try and avert this second blunder in the other seven ships under construction, I had an interview early in July, 1912, with Mr. Churchill, and pointed out the seriousness of the defect. He explained to me that the whole Board of the Admiralty were very much opposed to my system of director firing, and that as they were quite certain that it would never be adopted, he had been obliged to agree to their proposals that a light mast, capable only of carrying a small observation station for the officer directing the fire, should be put in, instead of one suitable for carrying a director tower. Thereupon I pointed out to the First Lord that his Board were ignorant and did not know what they were talking about; that their objection to director firing was not



H.M.S. *Lion*—before and after alteration.

founded on substantial reasons; and that their stupid decision would put the country to the expense of carrying out fresh alterations in seven ships—either strengthening the masts they had put in, or pulling them out and putting in new ones.

Mr. Churchill's reply was to the effect that he could not alter the policy of the Board; and I do not think he ought to be condemned for this decision, because the question was purely a naval and technical one. As I failed in my attempt to avert the blunder with the First Lord, I tried the First Sea Lord, but met with no success, and the blunder was perpetrated.

Subsequently, of course, *the masts of all these ships had either to be taken out or strengthened, at an enormous expense to the country.*

CHAPTER XVI

MY RETIREMENT FROM THE NAVY

A Letter from Prince Henry of Prussia—Created a Baronet and promoted to Admiral—Menace of the Submarine—Protective Measures necessary—The Official Attitude—Lessons of Manœuvres—The Admiralty unconvinced—Mr. Winston Churchill's Suggestion—Director Firing—My Services dispensed with—A Remarkable Letter from Whitehall.

After the successful trial of director firing in November, 1912, a further trial took place between the *Thunderer* and *Orion* at Portland. A paper reported that at this trial the *Thunderer* had been beaten, and the headline was *"Surprising Defeat of Sir Percy Scott's 'Director' System."*

Prince Henry of Prussia, who was at the time staying in London, sent me the cutting, and pointed out to me that this rather contradicted what had previously appeared in the Press. I telegraphed back that newspapers were not always quite accurate, and in reply received the following letter:—

"My dear Admiral Scott,

"I herewith return your telegrams with thanks! Prince Bismarck is supposed to have remarked once, commenting on the Press: 'The papers sometimes really say the truth, from which it does not result, however, that everything they say is always true!' This seems to me a similar case!

"Always yours most sincerely,

"Henry of Prussia."

On the following day Prince Henry did me the honour of calling upon me at my house, and we had a long talk

MY OCCUPATION WHEN THE ADMIRALTY, HAD THEY APPRECIATED
MY DIRECTOR FIRING, WOULD HAVE KEPT ME BUSY

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over gunnery matters. H.R.H. said the principle of my firing was, of course, well known in Germany, though the details of it were not known, and that they were installing in their ships possibly a somewhat similar system. He reminded me of the fact that I had seen at Kiel a system which at that time was ahead of ours.

The subsequent War demonstrated that the Germans were nothing short of barbarians, and we tarred them all with the same brush, but I think that had Prince Henry of Prussia been Emperor of Germany instead of his brother, the Germans would not have been encouraged to sink hospital ships, poison wells, use poisonous gas, insult, starve, and torture prisoners, and commit other atrocities that have disgraced Germany's name throughout the whole civilised world.

As I knew that the Germans were improving their system of firing, I tried in vain to hustle the Admiralty into getting some more ships fitted with director firing. They proceeded in their ordinary leisurely manner, pursuing a dilatory system which would break any commercial firm in a week. Time was to them of no importance. Left thus with nothing to do, I went to Murren, and when the Admiralty ought to have caused me to be very busy getting the Navy ready to fight, I was busy skating.

Just before the end of the year I received a letter from Mr. Asquith, intimating that he had suggested to the King that I should be made a Baronet for my services in connection with gunnery progress, and that His Majesty had approved.

Early in 1913 I was promoted to Admiral, and I retired. It did not appear to me to be of any use remaining on the Active List, as I should only have been blocking the way for younger men. I had been in H.M. Navy for forty-seven years.

I was still employed by the Admiralty in director firing, and there was much more to be done, for their Lordships had not even sanctioned it for the secondary armament, for which it was as much required as for the heavy guns.

In addition to this work my thoughts were much occupied on "submarines." I had been for a long time trying to find some way of successfully attacking them. I found the problem a very difficult one, and as no one else appeared to have evolved a successful method of locating and destroying these newly-devised craft, their advent into sea warfare was a real menace, and necessitated a revolution in our naval building programme.

I took the liberty of pointing out to the Admiralty that the Germans were building many submarines, and large ones; that we wanted many more for the protection of our coasts and colonies; and that we wanted aeroplanes to search for submarines, and more fast destroyers with which to attack them.

I found that their Lordships did not realise the potentialities of the submarine, or the deadliness of the torpedo, their theory being that the submarine was an untried weapon, and that the torpedo was inaccurate. That this view should have been held at the Admiralty I considered a danger to the country, for it was obvious that if their Lordships did not recognise the power of the submarines they would not consider any anti-submarine measures necessary. The official view was the more surprising since in all recent naval manœuvres the submarine had over and over again demonstrated its deadliness of attack, and it should have been apparent to every one that the introduction of these vessels had revolutionised naval warfare and put into the hands of the Germans a weapon of far more use to them than their fleet of battleships.

As I could not convince the Admiralty that the submarine was anything more than a toy, I considered it my duty to communicate with the Press. On the 15th December, 1913, I wrote a letter but withheld it on representations by a member of Parliament that the Little Navyites, then very powerful in the country, might use it as a weapon to cut down the Navy Estimates, and that I should better serve the country by waiting until the estimates were passed, and Mr. Winston Churchill had got the money. He could then, if he agreed with me, easily strike off some battleships from the building programme, and spend the money voted for their construction on submarines, aircraft, and anti-submarine measures.

Their Lordships were so annoyed with me for venturing to put their heads straight as regards submarines that at the end of the year they took away the pay that I had been receiving for helping them with director firing. Their letter was remarkable for the statement that the installation was practically completed in several ships and that the manufacture of the gear was in a very advanced stage. As a matter of fact, it was only completed in two ships and was not even designed for the various classes of ships in which it was to be installed. In this letter, dated the 30th December, 1913, the Admiralty bade me farewell, expressing "their high appreciation" of my services in connection with "this sighting gear" and referring to its "marked success."

CHAPTER XVII

WAR—BACK TO WORK, 1914 AND 1915

The Shadow of Ireland—Letter to the *Times* on Submarines—Criticisms by many Naval Officers—The War settles the Controversy—The War Office and the Lack of Big Guns—Lord Roberts' Advice ignored—Ten Months' Delay and Repentance—The Fleet's Gun Equipment—Recall to the Admiralty—Fitting out the Dummy Fleet—The Submarine Problem demands Attention—Visit to the Grand Fleet—The Peril of the Grand Fleet—Lord Fisher's Influence—The Tragedy of the Battle of Jutland—Official Persistence in Error—The Dardanelles Failure—Gunnery Practice in the "Sixties"—Successive Changes in the Target—Valueless Prize Firing—My Suggestions for Improvement—Method adopted on the China Station and its Results—Admiralty Opposition to its Adoption—King Edward's Interest in the Question—New Admiralty Rules adopted—Their Disastrous Effects—Captain Jellicoe's Action—Immediate Improvement.

In the early part of the year 1914, having nothing to do, and as Ireland was arming for a civil war, I thought I would join the Ulster Field Force, but they had so many military officers ready to serve with them that I was not wanted.

I was disgusted to find that there was a secret plot by which the Navy was to take part in the attack on Ulster. It was terrible to realise that the Royal Navy was to be employed against a section of Irishmen who were loyal to our King and the country, and that the civil war was to take place simply because a certain number of men wanted to remain in Parliament.

The situation was unique. The political party in office had two courses open to them: one to go out of office and have no civil war; the other to remain in office and have a civil war. It seems incredible that two hundred and seventy Englishmen should be ready to embark

on all the horrors of war sooner than give up their seats in Parliament, but that is exactly what they decided to do.

This unhappy state of affairs did a great deal of harm both in the Army and the Navy, and contributed in many ways to the unprepared state in which in some respects the Great War found us.

In due course the Navy Estimates for 1914-1915 were published, and as the substance of them revealed that the Admiralty had realised neither the menace that submarines were to this island country not the necessity of providing measures against them, I sent a letter to the *Times* on the 4th June, 1914, the gist of which was as follows:—

> "That as we had sufficient battleships, but not sufficient submarines and aircraft, we should stop building battleships and spend the money voted for their construction on the submarines and the aircraft that we urgently needed.
>
> "That submarines and aircraft had entirely revolutionised naval warfare.
>
> "That if we were at war with a country within striking distance of submarines, battleships on the high seas would be in great danger; that even in harbour they would not be immune from attack unless the harbour was quite a safe one.
>
> "That probably if we went to war, we should at once lock our battleships up in a safe harbour, and that the enemy would do the same.
>
> "That all naval strategy was upset, as no fleet could hide from the eye of the aeroplane.
>
> "That submarines could deliver a deadly attack in broad daylight.
>
> "That battleships could not bombard an enemy if his ports were adequately protected by submarines.
>
> "That the enemy's submarines would come to our coasts and destroy everything they could see."

These were the salient points of my letter. The statements were not mere effects of my imagination; they were facts which every naval officer should have known, and all the young Navy did know of them. But the seniors still regarded the submarine as a toy. Consequently the critics fell heavily on me and treated me as an incompetent agitator.

As I had made a study of submarines for some years, I naturally knew something about them; it was my profession to know about them, and I should have been professionally ignorant had I not known about them. The criticisms on my letter showed how little the country knew about submarines; as regards the Press I was not surprised, because all submarine work had been kept secret. What surprised me was that five Admirals rushed into print to tell the world how little they knew.

Admiral Sir E. Fremantle described my letter as a mischievous scare.

Admiral Sir Cyprian Bridge said I had not gone thoroughly into the matter.

Admiral Bacon was astonished at my publishing views with an authoritativeness which could only be justified by an accuracy of knowledge which it was difficult for him to see that I had at my disposal. He pointed out the great difficulties that there were in navigating a submarine.

Admiral Sir Francis Bridgeman (the late First Sea Lord of the Admiralty) referred to submarines as inaccurate and undeveloped weapons. This was, of course, the view that I knew the Admiralty had taken of submarines, and hence the necessity for me to write to the papers.

Lord Charles Beresford stated that submarines could only operate in the day-time; that they were highly vul-

nerable, and that a machine-gun could put them out of action.

It appeared strange to me that these gallant officers should think that I did not know what I was talking about, practically classing me as professionally ignorant. If before writing to the papers they had consulted any midshipman, he could have explained to them that my letter to the *Times* was not a scare, but a warning; he could have taught them that submarines were not difficult to navigate; that torpedoes were not inaccurate if properly handled; that submarines were not undeveloped weapons; that a machine-gun could not put a submarine out of action, and that submarines could operate at night-time.

I, as well as most thinking naval officers, naturally knew before the war what submarines could do; the public have since learned; so the criticisms on my warning may be interesting. Here are some of them:—

"Lord Sydenham regards Sir Percy Scott's theory as a 'fantastic dream,' and considers that Sir Percy Scott does not appear to have grasped the logical results of his theories."—*Hampshire Telegraph,* June 12th, 1914.

"Sir Percy Scott's ideas approach the boundaries of midsummer madness."—*Pall Mall Gazette,* June 5th, 1914.

"Admiral Sir E. Fremantle describes Sir Percy Scott's eulogy of the submarine as a mischievous scare."—*Portsmouth Times,* June 12th, 1914.

"The views of Sir Percy Scott depend upon unsupported conjectures, quite natural to a mind deeply imbued with the sense of perfection of modern mechanical contrivances, but dangerous if translated into national policy. His letter interests me greatly because it exactly illustrates the conflict of opinion which may arise between the mechanical engineer and the student of naval war. On the high seas the chances of submarines

will be few, as they will require for their existence a parent ship which, on Sir Percy Scott's hypothesis, must disappear."—Lord Sydenham.

"As a romance, or even a prophecy, Sir Percy Scott's forecast is fantastic, but as practical tactics it is so premature as to be almost certainly fatal; it may safely be relegated to the novel shelf."—*Manchester Courier,* June 6th, 1914.

"Sir Percy Scott's is a very impressive picture. Written by a literary man doing a scientific novel or scare tale, it would pass well enough. But is it what we have the right to expect from a most accomplished naval gunner, and a naval officer of approved capacity? The imaginative, fancy-picture-making spirit of the thing is out of place over Sir Percy Scott's name."—*Manchester Guardian,* June 6th, 1914.

Admiral Bacon writes: "It is rather astonishing to find Sir Percy Scott rushing into print and publishing views with an authoritativeness which could only be justified by an accuracy of knowledge which it is difficult to see that he has at his disposal."—*Times,* June 15th, 1914.

"To speak frankly, Sir Percy Scott's letter was a most approved example of the mare's-nest. Lord Sydenham and other writers have shown how perfectly ridiculous it is to treat the submarine as if it were a weapon of precision which could be relied upon to do the kind of things it is expected to do in Sir Percy Scott's futurist idea of naval warfare."—*Spectator,* June 13th, 1914.

"Mr. Hannon (Secretary of the Navy League) says the statements contained in Sir Percy Scott's letter are premature, ill-advised and calculated to do serious harm to the cause of maintenance of British supremacy at sea." *Globe,* June 6th, 1914.

"Is Sir Percy Scott a dreamer of dreams like Admiral Aube? Or is he a precursor of practical achievements? Let us not forget that the dreams of to-day are often the realities of to-morrow."—*Daily Graphic.*

"Sir Percy Scott has conceivably described the actual conditions which will prevail in 1920 or 1930."—*Belfast News,* June 6th, 1914.

"It may be that in years to come a war will show that Sir Percy Scott was before his time. This is a possibility, if not a probability."—*Naval and Military Record,* June 10th, 1914.

Lord Charles Beresford writes: "A submarine cannot stay any length of time under water, because it must frequently come into harbour to replenish its electric batteries."—*Times,* July 7th, 1914.

"Mr. David Hannay throws doubt upon the value of the submarine. Indeed, he seems to regard it as little better than a clever scientific toy. Doubtless, he suggests, it has potentialities, but these are at present of a very limited and unproved kind."—*Times,* June 26th, 1914.

Mr. H. W. Wilson writes: "A submarine cannot in any case do her work without the support of surface ships."—*Daily Mail,* June 11th, 1914.

"The chances of the submarine in the serious warfare of the future are much smaller than Sir Percy Scott imagines. Sir Percy Scott has given to the submarine credit for qualities which have yet to be proved."—*Outlook,* July 10th, 1914.

"At the present time submarines cannot communicate with one another, neither do they possess any serious utility at night-time, and in rough weather they may be utterly ignored."—*Engineer,* June 12th, 1914.

"On the face of Sir Percy Scott's statement, one can only say that the submarine has not yet reached the stage of development that justifies the gallant Admiral's estimate of its value in war."—*Daily Graphic,* June 5th, 1914.

"The submarine, a slow vessel, is dependent for vision on the sea-plane which has three or four times her speed, and must maintain that speed."—*Pall Mall Gazette,* September 7th, 1914.

Admiral Sir Francis Bridgeman, First Sea Lord, thus criticises Sir Percy Scott's contentions: "Sir Percy Scott's letter contains nothing that is new to the Admiralty authorities, except that in his statement he advises an immediate reduction in the shipbuilding programme, and recourse to what are at present inaccurate

and undeveloped weapons, in place of battleships."—*Daily Mail,* June 8th, 1914.

Lord Beresford writes: "The submarine can only operate by day and in clear weather, and it is practically useless in misty weather."—*Times,* July 11th, 1914.

"Submarines can be shadowed until compelled to rise, and then they are doomed."—*Observer,* June 7th, 1914.

"Sir Percy Scott himself writes as if the submarine were always invisible, and as if her speed when submerged were the same as her speed on the surface. The submarine is only invisible for a small part of the time; she can stay below perhaps six hours at a stretch. Once she comes to the surface, she is the most vulnerable of all craft. Moreover, they are but little danger to a fleet under way."—*Observer,* June 14th, 1914.

Lord Sydenham writes: "On the surface the submarine is a most inferior destroyer, slow, supremely vulnerable and unsuitable for long habitation."—*Times,* June 6th, 1914.

Lord Charles Beresford writes: "A submarine is highly vulnerable; a machine-gun or well-directed bullets could put it out of action."—*Times,* July 11th, 1914.

Mr. Arnold White writes that "if war is declared our Dreadnoughts would have to be tucked away in some safe harbour, and that the place for the German Dreadnoughts would be in the Kiel Canal with both ends sealed up."—*Referee,* June 14th, 1914.

"The effects of the torpedo have continually fallen far behind expectation. It is far from being certain that battleships, even when struck, will be destroyed beyond repair."—*Observer,* June 7th, 1914.

"The basis of the argument held by Sir Percy Scott lies in the statement that 'submarines and aeroplanes have revolutionised the naval warfare. No fleet can hide from the aeroplane, and the submarine can deliver a deadly attack even in broad daylight.' Each of these points, however, seems to be capable of argument."—*Sunday Times.*

These criticisms call for no comment. Journalists who wrote in depreciation of what I had suggested were

not to blame. They knew no more about submarines than I did about newspaper production. They merely repeated the views of some office of the Navy. Point by point the War has answered all the criticisms of my letter and fully demonstrated that submarines and aeroplanes have revolutionised warfare.

On the 4th August, 1914, war was declared against Germany. I wrote to the Admiralty and offered to serve in any capacity they thought fit. I suggested that I might possibly be of use in assisting to get director firing into our ships, or hastily mounting heavy guns for land service. Their Lordships did not even condescend to acknowledge the receipt of my letter, so I amused myself gardening at Ascot, where I was living.

One day in September, 1914, I met Field-Marshal Earl Roberts, who also lived at Ascot. He pointed out to me how deplorably short we were at the front of long-range guns, and asked me if I could quickly mount some on the same sort of carriage that I made in South Africa. I replied that as, with limited resources in South Africa, we were able to mount one 6-inch gun in 48 hours, we could easily in this country, by dividing the work between our dockyards, mount 100 in a month.

Lord Roberts was so delighted with the idea that he went straight to the War Office to see Lord Kitchener, and after a lapse of a few days he wrote me, enclosing a letter from the Secretary for War. Lord Kitchener, under date September 15th, 1914, explained the position, adding that he had discussed my suggestions at the War Office with those concerned. He remarked that steps had already been taken to provide 6-inch howitzers carrying a hundred-pound shell, both lyddite and shrapnel, and that arrangements had been made for 6-inch guns on mobile carriages to be sent to the front. While thank-

ing me for my offer, he added that at that time the War Office did not "want any extra guns."

Neither the War Office nor the Admiralty had at that time learned the value of long-range guns. Lord Roberts said: "They will learn by bitter experience," and this was the case. Ten months afterwards, in July, 1915, they found all their guns outranged by the Germans. The War Office then asked me if I could quickly mount eight 6-inch Mark VII guns, having a range of 20,000 yards. I prepared a design practically on the same lines as that of the 6-inch gun used in South Africa. The work was undertaken by Chatham Dockyard, and in a very short space of time these eight guns were doing useful work against the Germans, their 40° of elevation enabling them to out-range every other gun we had at the front.

In the early stage of the war the state of our Navy as regards gunnery efficiency was deplorable, though two years had elapsed since it had been clearly demonstrated that director firing was the only system of firing which would give us a chance of success in action, and although it was well known that the Germans had some form of director firing in all their ships. *When war was declared we had only eight ships fitted to fire their heavy guns by director, and not one ship fitted, or being fitted, to fire her 6-inch guns by the same method.*

I urged the authorities to do something, but they would not move. I was informed that the First Sea Lord, H.S.H. Prince Louis of Battenberg,[1] who was responsible to the nation for the efficiency of our Fleet in gunnery, had the matter well in hand.

Almost directly after the war commenced German submarines became very active, sending to the bottom the *Pathfinder, Cressy, Hogue, Aboukir,* and *Hawke,* with a loss of about 4000 officers and men drowned.

[1] Now the Marquis of Milford Haven.

These vessels were patrolling at slow speed off a coast very near to the enemy's submarine base. Why they were sent there no one knows, but that the Admiralty sent them there is revealed in Lord Jellicoe's book. Their destruction was inevitable. The loss was the price the country had to pay for the Admiralty regarding submarines as toys.

On the 1st November, 1914, my old ship the *Good Hope,* in company with the *Monmouth, Glasgow,* and *Otranto,* engaged the German cruisers *Scharnhorst, Gneisnau, Leipzig,* and *Dresden* in the Pacific. After a short action the *Good Hope* and *Monmouth* were both sunk by the Germans' superior shooting. These ships were caught in bad weather, and as neither of them was fitted with any efficient system of firing their guns in such weather, they were, as predicted in my letter to the Admiralty of 10th December, 1911,[1] annihilated without doing any appreciable damage to the enemy.

These two ships were sacrificed because the Admiralty would not fit them with efficient means of firing their guns in a sea-way. Had the system with which I had fitted the *Good Hope* been completed and retained in her, I dare say she might have seen further service and saved the gallant Cradock and his men on this occasion.

During October, after the heavy losses that our Navy had sustained, the feeling of the general public that we ought not to have a Prince of foreign birth at the head of our Navy manifested itself, and Prince Louis of Battenberg resigned his position as First Sea Lord on the 30th October, his place being taken by Admiral of the Fleet Lord Fisher.

On the 3rd November, 1914, the First Lord, Mr. Winston Churchill, sent for me, and informed me that their Lordships had decided to employ me at the Ad-

[1] Cf. Chapter XV.

miralty on special service in connection with the gunnery of the Fleet, and I was appointed "Adviser to their Lordships on matters connected with the gunnery efficiency of the Fleet." I was further directed to investigate the question of attacking the enemy's submarines, and to put forward any suggestions that I could in that direction.

Before embarking on either of these duties I was told to design and equip a fleet of dummy battleships, taking ordinary merchant ships and converting them so that, even at short distance, they had the appearance of battleships. Mr. F. Skeens, a very able Admiralty draftsman, prepared tracings of the merchant steamers, and tracings to the same scale of types of our battleships. One tracing was put over the other and the necessary transformation quickly decided on. It was much more simple than I anticipated.

The next day Messrs. Harland & Wolff had about 2000 men cutting sixteen fine merchant ships to pieces. How splendidly this firm did their work can be seen from the photographs.

The question of equipping this squadron with officers and men was a difficult one, but I had the good fortune to meet Captain Haddock, C.B., who had given up command of the *Olympic*. He had been with me in H.M.S. *Edinburgh* in 1886.

I took Captain Haddock to the Admiralty, and suggested that they should make him into a Commodore, and place him in command of the squadron, with full power to ship the necessary officers and men. This squadron had to be given a name, and I suggested the S.C. Squadron, or the Special Coastal Squadron. "S.C. Squadron" could also mean "Scare Crow Squadron." You could take your choice! One of these ships was, I believe, sunk by a Hun submarine whose captain, when

A MERCHANT SHIP BEFORE CONVERSION

THE SAME MERCHANT SHIP AFTER CONVERSION

THE DUMMY FLEET

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he found she was only a dummy, went mad and blew his brains out.

The purchase of the ships to form this squadron, and the expense of altering them cost about £1,000,000. How these ships were to be usefully employed was not divulged to me. If some deep scheme existed in which they were to take part, it never matured, for a short time after their alteration, changes having occurred at the Admiralty including the retirement of Lord Fisher, those that remained of them were converted back again.

At the beginning of the war, in my opinion we could better afford to lose a battleship than a merchant ship, but that was not the Admiralty opinion. They commandeered them in the most ruthless and reckless manner, sinking them to make breakwaters, and putting them to any use except bringing food to this country. It was further proof that the Admiralty did not believe in the submarine menace; the warning which I had given them and the nation was still unheeded. It was not until the third year of the war, when four million tons of merchant shipping had been sent to the bottom, that the Admiralty woke up and started to order merchant ships to be built, and even then their orders were so bound up with red tape that the builders could not proceed with alacrity. A shipbuilder told me that in placing an order the Admiralty sent him so many forms to fill in that he had to tell them they could have the ships or the forms, but they could not have both.

With regard to attacking submarines, as the Admiralty before the war regarded them as little more than toys, it was only natural that no progress had been made in the direction of taking measures for destroying them. A committee had certainly been at work for some time, but had evolved nothing.

When I came on the scene, which was about one hun-

dred and twenty days after war was declared, I found that they had not even taken steps to put rams on our trawlers and torpedo boat destroyers, or to give them a weapon to attack a submarine if they happened to pass over her. The *Badger* had rammed one, but her round stem did not do enough damage to sink the submarine, and when she passed over her she had no bomb to throw down at her. To meet the case, I suggested that rams should be put on our torpedo boats, destroyers and trawlers, and that was done. I designed and submitted a bomb which could be thrown down on to a submarine if she was on or near the surface. This suggestion was accepted and rapidly introduced.

The depth charge, which ultimately turned out to be the antidote to the submarine, furnishes a remarkable illustration of Admiralty methods. Who invented it? It has even been suggested that it was an American. What are the facts? On the 1st October, 1914, Captain P. H. Colomb submitted the design of a depth charge, actuated by a hydrostatic valve. On the 19th October Admiral Sir Charles Madden made a similar proposal, and suggested a howitzer to "lob" the charges out. Although I was head of the Anti-Submarine Department of the Admiralty, I was left in ignorance of both these proposals—an illustration of bad administration and the extent to which the Admiralty works in watertight compartments, one not knowing what the other is doing. So, on the 16th November, I proposed a depth charge which could be dropped from an aeroplane or surface craft. The idea was so simple that these depth charges could have been supplied in quantities by the end of the year. What happened? These three valuable suggestions were treated in the usual Admiralty way—efforts were made to improve on the idea in order to produce something which would bear the hall mark of the Admiralty, with

the result that, instead of having a depth charge and ejecting howitzer at the end of 1914, we did not get them until 1916. It was a serious matter, for I have no doubt that had the depth charge come into use in 1914, as it could have done, it would have saved a loss of about £200,000,000.

We were very short of fast surface boats—the submarine's greatest enemy. In connection with this shortage rather a peculiar thing happened. On the 30th June, 1914, that is just before the outbreak of war, one of the guests at a dinner party asked what was the antidote for submarine. In my reply I mentioned that very fast surface boats carrying a gun would be useful. Exactly one year after this, on the 30th June, 1915, this gentleman brought me a good design of a very fast (40 knots) hydroplane motor boat, 60 feet long. I took the design to the Admiralty, and they promptly turned it down. One year after this they ordered a few hydroplane 40-feet long motor boats. They were not of much use. A year afterwards, in April, 1917, they ordered a large number of similar boats of 55 feet in length. Two years' waste of time, and we were at war!

I next had to turn to a much more difficult problem, the gunnery of the Fleet. I went up to Scapa Flow in the Orkneys (13th November, 1914), and had a long interview with Sir John Jellicoe. The Grand Fleet was assembled in this harbour for strategic reasons, and also to keep the ships as far away as possible from the German submarines. The Commander-in-Chief discussed with me the terrible state of affairs, the salient point of which was that for strategic reasons he was obliged to keep the Grand Fleet at Scapa, that German aeroplanes had been over the harbour, and must be quite conversant with the anchorage of the Fleet and the unprotected approaches, that he was doing all he could to

make the anchorage safe, but that the measures were not complete and that any night submarines might come in and send the Grand Fleet to the bottom. When I said "Good night" to Lord Jellicoe, I added, "Shall we be here in the morning?" His laconic reply was, "I wonder."

Why the Fleet was not destroyed, I cannot imagine. Either the German submarines lacked pluck, or possibly as the Commander-in-Chief of the Grand Fleet suggests in his book, the German mind could not believe that we could be such fools as to place our Fleet in a position where it was open to submarine or destroyer attack. If this was in the German mind, why was he not enterprising enough to use it?

A story is told that a German airman, having reported that they could see no defences at Scapa, two spies were sent, and at that time it was very easy for them to get over. They reported that there was no protection. The Germans promptly shot them, as they considered they were lying. They then sent two more; they were not going to take any risks, so they reported that our Fleet was as safe as theirs was in the Kiel Canal. Perhaps that is why the Germans did not win, as they could have won, in 1914. If the Germans had had half a dozen men of the stamp of our submarine commanders, we should now be a German colony. This knowledge will be the bitterest pill that the Germans have ever had to swallow.

And before I leave this subject of the unpreparedness of the Grand Fleet in some respects for war, I must revert to the criticism of Lord Jellicoe for not pursuing the German Navy after the battle of Jutland and fighting them on the night 31st May-1st June. Lord Jellicoe had a very good reason for not doing so. The British Fleet was not properly equipped for fighting an action at night. The German Fleet was. Consequently, to fight

them at night would have only been to court disaster. Lord Jellicoe's business was to preserve the Grand Fleet, the main defence of the Empire, as well as of the Allied cause, not to risk its existence. I have been asked why the Grand Fleet was not so well prepared to fight a night action as the German Navy. My answer is, "Ask the Admiralty." The German Fleet went back, only to come out again when they crossed the North Sea like a flock of sheep to surrender. The German sailors were made in Kiel Harbour. This harbour is like the Serpentine—and a sailor cannot be trained on the Serpentine, and that is what was the matter with the German Navy.

It was very gratifying to find the Grand Fleet all cheery in spite of the dangers that confronted it—drilling night and day at their guns, and doing everything possible to improve the efficiency of themselves and of their weapons. It was the weapons that I had been sent up to inquire about, and the conditions made me very anxious. Only eight ships of the whole Fleet had their main armament fitted for director firing, and all work on the other ships had been suspended on the outbreak of war. Practically a hundred days had been lost, and, to make matters worse, none of the necessary electric cables and fittings had been ordered. Fitting the secondary armament with director firing had not been contemplated.

Such a state of things seems incredible. One would have thought that, although their Lordships paid no attention to my warning in 1911, the moment war was known to be inevitable they would have bestirred themselves and ordered all the material necessary to put the Fleet in a state of gunnery efficiency. But practically nothing had been done.

I had a conference with the First Lord (Mr. Winston Churchill) and the First Sea Lord (Lord Fisher), and pointed out to them the serious state of affairs, and how

badly we should fare if the German Fleet came out.[1] They realised the position and approved of practically all the ships being fitted with director firing, including vessels of the *Warrior* and *Defence* class; and some small cruisers of the *Cordelia* class; and further, they agreed that I could arrange it without being held up by the ordinary Admiralty red tape. I took their approval to Sir James Marshall, the Director of Dockyard Work, and to the late Mr. Forcy, the Director of Stores; without any letter-writing they acted on it at once. Drillers were sent up to the Fleet to commence the wiring, and the necessary cables and fittings were ordered. The Wolseley Motor Car Company ceased making motors to make director instruments. Consequently the fitting of the ships went on rapidly, and had the "push" been maintained our whole Fleet would have been equipped by the end of 1915.

In May, 1915, unfortunately for the nation, Lord Fisher left the Admiralty and all the "push" ceased. I no longer had any influence; the authorities went back to their apathetic way of doing things; time, even in warfare, was not considered of any importance by them.

The result of this was that at the Battle of Jutland, fought on the 31st May, 1916, the Commander-in-Chief had only six ships of his Fleet completely fitted with director firing—that is main as well as secondary armament; he had several ships with their primary armament not fitted; he had not a single cruiser in the Fleet fitted for director firing; he had no Zeppelins as eyes for his Fleet; his guns were out-ranged by those of the Germans. He had to use projectiles inferior to those used by the Germans; and in firing at night he was utterly outclassed by the enemy.

[1] Fortunately for the country the German Fleet did not come out until eighteen months afterwards.

In one portion of the Fleet I had a very personal interest—the cruisers of the *Warrior, Black Prince,* and *Defence* classes. They had a mixed armament of 9.2-inch and 7.5-inch guns, and consequently were very difficult ships to fight unless they had director firing. Lord Fisher had approved of this class of ship being fitted with director firing in November, 1914, but the Admiralty did not place the order until April, 1915. It was their Lordships' intention to place the order in January, 1915, which was far too late; but the papers were mislaid, which caused a delay of three months.

The Germans in the Jutland Battle sent these three ships to the bottom, and I lost my elder son, a midshipman, sixteen years of age. A week before he went into action he said to me: "Father, if we have a scrap, our gunnery lieutenant says we shall not have a dog's chance, as our extemporised director which we have rigged up is not reliable, and the Germans can out-range our guns. We have only got 15° of elevation; the Germans have got 30°. They will be pumping shell into us and our guns won't reach them by a couple of miles."

My midshipman son was quite correct; they had not a dog's chance. All our guns were out-ranged by the Germans. This superiority of range was conceded by our own Board of Admiralty to the German nation. In 1905 I paid a visit to Kiel, as I have already mentioned, and on my return to London, informed the Admiralty that the Germans were giving their guns 30° of elevation. The Director of Naval Ordnance at that time, Sir John Jellicoe, was in favour of increasing our elevation, but, as I have already explained, the Director of Naval Ordnance was only Director in name. He was not a Lord of the Admiralty and had no power, so nothing was done. We continued to give our guns only 13½° of elevation. Four years afterwards, in 1909, we increased the eleva-

tion in new ships to 15°. In 1911 we increased it to 20°, and in 1915, a year after war was declared, the Admiralty did what they ought to have done ten years before, that is they decided that in all new ships the guns should be capable of firing at 30° of elevation. Finally, in 1917 they increased the elevation in some ships to 40°.

My readers may not be quite conversant with the term "elevation," and the importance of it, so I will explain. Within certain limits the higher you point a gun up, the further the shot will go. For example, if you fire a 12-inch gun at 15° elevation, the shot goes 16,000 yards; if you fire at 30° the shot goes 24,000. Therefore, a ship that can fire her guns at 30° has 8,000 yards more range than a ship that can only fire her guns up to 15° elevation. They both have the same guns; the increase in range is simply due to the platform in the one case allowing the gun to be raised to an angle of 30° instead of to only 15°.

Early in the year 1915 it was decided to build some monitors, carrying guns of 15-inch, 14-inch, and 9.2-inch calibre. As these vessels were for bombardment purposes, it was essential that their guns should be capable of firing at a high elevation, so as to obtain a long range. This essential had unfortunately been overlooked by the Gunnery Department. I called Lord Fisher's attention to it, and offered to increase their elevation from 13½° to 30°, without delaying the ships, provided that I could break through all Admiralty ideas. There was to be no paper work, and no red-tape. He agreed to this. I rang up Messrs. Armstrong, Whitworth & Co., of Newcastle-on-Tyne, discussed the subject with them, and got them to send me a drawing by the night mail. In the morning I showed it to Lord Fisher; he approved the proposal and I wired to Newcastle, directing Armstrong to proceed with the alteration. The whole operation took

twenty-two hours. There was, of course, nothing wonderful about it; it merely illustrated how all work during the war should have been done. Lord Fisher was very pleased with the celerity with which it was carried out, but the paper brigade at the Admiralty did not like their ordinary red-tape ideas being over-ridden, and wrote to the Armstrong firm, informing them that I was only acting in an advisory capacity to the Admiralty, and Admiralty approval should be obtained in accordance with the usual practice. If this business had been attempted with the usual Admiralty practice it would have taken a month to get the paper work through, and probably it would not have been done at all.

What a curse to the nation red-tapism was during the War! I received a letter containing a shocking example of it. At Malta there were three of our submarines eager to go out and sink the *Goeben* and *Breslau.* They were not allowed to do so because they had been sent to Malta for "defence purpose." How could they have better defended Malta than by sinking these two ships? It would not have been surprising had the officers turned a blind eye to their orders, and gone out and sunk them.

On the 13th January, 1915, I was sent for by the First Lord (Mr. Winston Churchill) and he told me that H.M.S. *Queen Elizabeth* was going out to the Dardanelles, that the Navy was going to smash all the forts and go through to Constantinople, and that I could go in command.

I could not accept the offer as I knew it was an impossible task for the inefficient ships then in the Mediterranean to perform. What was done is now a matter of history; practically everything that we could do wrong we did. Our casualties were:—

Men.		Battleships Sunk.	
Killed	23,035	*Irresistible*	15,000 tons
Wounded	73,008	*Ocean*	12,950 "
Missing	10,567	*Goliath*	12,950 "
Sick	90,000	*Triumph*	11,800 "
		Majestic	14,900 "
		Bouvet	12,000 "
	196,610		79,600 "

For our legislators the Dardanelles will probably be the blackest page in the War's history; for our seamen and soldiers it will be one of the brightest. They landed under conditions which no other troops in the world would have faced, and displayed bravery unequalled in any other theatre of war.

The landing in the Dardanelles and the subsequent retirement we can forever be proud of; our nation must ever be ashamed of the authorities responsible for the plan of attack.

As I have referred to inefficient ships in the Mediterranean, it may be convenient at this point to summarise the general course of gunnery practice during my period of service in the Royal Navy. In 1866, when I joined the Navy the allowance of practice ammunition was eight rounds per gun per quarter. This ammunition was supposed to be expended at a cask carrying a flag, some one aloft judging where the misses went. Points were awarded and prizes given. Many ships avoided carrying out this firing. In some cases the practice ammunition was thrown overboard, and I know of one case where the powder was sold and paint bought with the proceeds.

In 1881 the cask was done away with, and a triangular canvas target substituted for it. The ship firing steamed round on the sides of a square. Hits could not be counted, as a shot hitting one side of the target made a hole in the opposite side also. Moreover, the target generally fell down when it was hit.

In 1885 it was decided to have a target on which hits could be counted, and to award prizes for hits only, whether ricochet or not. The target, 15 feet high and 40 feet long, was moored, and the ship steamed by it on a marked-out base, at a range varying from 1600 to 1400 yards.

In 1892 the dimensions of the target were altered to 16 feet 9 inches high and 20 feet long, the other conditions remaining the same. The target had three masts, and if one was struck the whole canvas generally came down. In such an event the instructions were that the target was to be repaired before going on, but the order was seldom obeyed as it caused delay. Ships generally went on and fired at any part of the target left visible.

Every ship was supposed to carry out this prize firing once a year, but a large percentage evaded it, and there was no reliance on the results sent in by the ships that actually carried it out. The Admiralty return of the results of prize firing was generally not issued until late in the following year, which was too late for any one to take an interest in it, and the ships were not arranged in order of merit.

In 1899, when in H.M.S. *Scylla,* I made an attempt to rectify this state of affairs by modifying the target, appointing independent umpires, and introducing competition. The Commander-in-Chief, Sir John Hopkins (as recorded in an earlier chapter), approved of the suggestion, but there was too much opposition to allow of any change being made.

In 1901, in China, I made another attempt, and it was warmly supported by the Commander-in-Chief, Sir Edward Seymour, his flag-captain, Captain Warrender,[1] Captain Jellicoe, and many other officers. The target was altered so as to allow of a new sail being used for

[1] The late Admiral Sir George Warrender, Bart.

each gun, and a second target was moored ready for use. Rules were drawn out to insure uniformity. Independent umpires were on board the firing ship, and competition was instituted by awarding points per hit. A return was made out showing all the ships on the station in their order of merit of firing.

The firing of the ships on the China Station immediately improved by leaps and bounds, and the Commander-in-Chief sent a full report to the Admiralty, with a suggestion that this method of carrying out Prize Firing should be generally adopted. The Admiralty, however, strongly objected to the proposed alterations, declined to introduce competition, and strenuously opposed publishing the ships in order of merit.

In 1902, as I record elsewhere, I had the honour of an audience with H.M. King Edward VII. His Majesty questioned me about the very bad shooting of the Navy, and inquired the reason for it. I explained that it was due to six causes:—

(1) Lack of attention to the subject on the part of the Admiralty, which produced lack of interest in it on the part of the officers and men.

(2) That officers' promotion depended upon the cleanliness of the paint work and not upon the battle-worthiness of the ship.

(3) That the Admirals as a rule took no interest in target practice; their custom was to go on shore when it took place.[1]

[1] The attitude of many Admirals to gunnery—since a ship existed only to hit first, hit hard, and keep on hitting—reminds me of a story which is not inappropriate. I once heard of a bluejacket, wounded in the foot, who asked a comrade to carry him to the sick bay. He picked him up and carried him along on his back. On the way a splinter carried away the head of the wounded bluejacket. The rescuer deposited the injured man on the floor of the sick bay. The surprised doctor exclaimed, "What have you brought him here for? he has no head!" "Well," was the astonished reply, "Old Bill was always a —— liar; he said it was his foot." If the war had come before the gunnery of the Fleet was improved, the nation would have had reason to ask, "What is the good of a Navy which cannot shoot?"

(4) That the Fleet was supplied with such bad gun sights that it was impossible to make good shooting with them; the only ships that had made good shooting had used gun sights of a non-Admiralty pattern.

(5) That there was no competition, and without competition the Englishman would do nothing. I pointed out that, only a few years ago, if a man-of-war got in forty tons of coal an hour it was considered very good, but that since Lord Walter Kerr (the then First Lord of the Admiralty) had introduced competition it had gone up to 200 tons an hour.

(6) That the only reason why the Admiralty wanted the results kept confidential was because they were so bad.

His Majesty fully recognised the value of introducing competition, and caused a letter to be written to Lord Selborne pointing out that two returns could be made out with the squadrons and ships in order of merit, one being confidential, giving the actual hits, and the other public, giving points only. The returns for 1903 were made out in this manner.

In 1903 new rules were proposed by the Admiralty for the 1904 firing. They embraced an increase in the range which precluded the layer from seeing whether he was hitting the target. I respectfully protested, and pointed out that as hits at the proposed range could not be seen it would eliminate all skill and convert the competition into a pure matter of luck.

The matter was so serious that I personally interviewed Lord Selborne, Admiral Sir William May, and the Director of Naval Ordnance, and begged them not to spoil the heavy-gun firing as they had spoiled the light-gun firing in 1902. I failed to move them.

In this year, so fatal to gunnery progress, it was also decided to give a medal to the best man in each

ship, provided he made over a certain number of hits. I again protested and pointed out that in accordance with the new rules two men would fire at the same canvas, and that on inspection after firing the number of holes in the target might show that one of the two men who fired had earned the King's Medal, but it would be impossible to say which of the two. My representations were without effect. The range was increased and by a stroke of irony the name was changed from Prize Firing to the Gun Layers' Competition.

In 1904 the so-called Gun Layers' Competition was carried out, with, of course, a disastrous result. The officers and men realised that they could not see whether they were hitting or not, and that the only thing to do was to fire quickly and trust to luck. With an increase in the expenditure of ammunition the percentage of hits to rounds fired was reduced. Forty-three ships evaded carrying out the practice. Any excuse was accepted, and the Admirals were generally the worst offenders. Difficulties arose in awarding the King's Medal, and in some cases it was tossed for—a most undignified proceeding.

Fortunately for the country, Captain Jellicoe, early in 1905, became Director of Naval Ordnance, and steps were immediately taken to rescue naval gunnery from the chaos into which it had fallen. This appointment had a great deal to do with our winning the war.

As regards the Gun Layers' Competition, the rules drawn up in China were taken out of the waste-paper basket and promulgated to the Fleet; the distance of the target was reduced so that the men could see their hits; and to meet the medal difficulty one man fired instead of two.

The annual return was made out with all the ships of the Fleet arranged in order of merit, and was published on the 31st December. No ships in 1905 evaded the

carrying out of their firing, and the results in 1905, in comparison with 1904, were:—

In 1904, 42.9 per cent. of hits to rounds per gun.
In 1905, 56.6 " " " "

This progress was fairly satisfactory, but there were a great many ships that did badly, and attention was called to it by holding forty Courts of Enquiry.

In 1906 the percentage of hits to rounds fired went up to 71.1 per cent., and in 1907 it rose to 79.1 per cent.

As a result of this improvement in the gunnery of the Fleet, H.M. King Edward VII invested Captain Jellicoe (who, as stated, was then Director of Naval Ordnance) and myself with the insignia of Knight Commander of the Victorian Order. *Punch* published a very good cartoon dealing with this.

CHAPTER XVIII

THE DEFENCE OF LONDON AGAINST ZEPPELINS

A Providential Raid by a Zeppelin—London Undefended—My Recall to the Admiralty—The Deficiency of Guns—Unsuitable Ammunition—Commander Rawlinson's Good Work—A Flying Visit to Paris—Co-operation of the French—My Protest against Admiralty Methods—Termination of my Command—The Anti-Aircraft Corps—Target Practice in the Air.

Many years ago I read an essay by Charles Lamb in which he set out to prove that many proverbial sayings were not true, but I still hope that experience does teach us something. It is that belief which leads me to tell the story of the defenceless state of London from air raids when the war came late in the summer of 1914. There had been mysterious stories of airships cruising over England by night before Germany broke loose, but any one who believed in them was denounced as an alarmist without common sense. So the country went on sleeping quietly at night and nobody worried, and we were all comparatively happy until suddenly hostilities began and the Germans settled down on the Belgian coast, an event which no one could have foreseen.

On Wednesday, 8th September, 1915, by the mercy of Providence, a Zeppelin came over London and dropped some bombs. I say that it was a mercy of Providence, because it showed the futility of our system of defence and compelled the authorities to take action. By some strange anomaly, the Lords Commissioners for "executing the office of High Admiral of the United Kingdom and of the territories thereto belonging and of the Colonies and other Dominions whatsoever" had become re-

sponsible for protecting London against air raids. This curious arrangement was due to the fact that Mr. Winston Churchill, then First Lord of the Admiralty, had had some perception of London's danger, for he had become a flying man himself, whereas the War Office was as certain that a Zeppelin could not come to London, as the Admiralty was that a submarine could not sink a ship.

But all that is by the way. On 8th September, 1915, a Zeppelin really came over London. Although throughout my career in the Navy I had been specially interested in gunnery matters, I confess that I was surprised when, three days later, I received a letter from Mr. Balfour, who was then at the head of the Admiralty, asking me if I would take over the gunnery defence of London, as a temporary measure, since in due course the War Office would assume control of the work, which, as he pointed out, was really theirs and not the Admiralty's. Mr. Balfour suggested that the task would prove interesting, and reminded me that it was certainly important; but at the same time he warned me, with characteristic kindness, that the means of defence at that time were very inadequate. He was good enough to add that he thought no one was better qualified than I was for the appointment, and he promised that the defences would be improved as fast as the manufacture of new guns and war conditions generally permitted.

I accepted the appointment, and had a look round the so-called defences. After fourteen months of war they consisted of:—

Eight 3-inch high-angle guns,

Four 6-pounders, with bad gun sights, and

Six pom-poms and some Maxims, which would not fire up as high as a Zeppelin, and were consequently only a danger to the population.

The ammunition supplied to the guns was quite unsuitable, and was more dangerous to the people in London than to the Zeppelins above.

In selecting the ammunition to fire at Zeppelins the authorities should have known: first, that a shell with a large bursting charge of a highly explosive nature was required so that it would damage a Zeppelin if it exploded near it; second, that all that went up in the air had to come down again, and that, in order to minimise the danger to the public from falling pieces, an explosive should be used in the shell which would break it up into small fragments.

The ammunition supplied was exactly the opposite to what we wanted. The shells had so small a bursting charge that they could do no harm to a Zeppelin, and they returned to earth almost as intact as when they were put into the guns.

Serious as this state of affairs was, it was no reflection upon my predecessor. In getting what he did he had done wonders, for he received the minimum of support, and had to contend against the maximum amount of apathy, red-tapism, and opposition on the part of the authorities. I doubt if many people, in or out of the Admiralty or War Office, really believed, in the early days of the war, in the danger of Zeppelin raids.

But after a considerable interval the citizens of London realised that the German Zeppelins could come and bomb them whenever they liked. On their behalf, the Lord Mayor of London went to the War Office and suggested that they should take some steps to keep the Zeppelins away. The War Office said that they could do nothing. The Lord Mayor then applied to the Admiralty, and their Lordships promised to form an Anti-Aircraft Corps, and supply it with the necessary material to defend London.

The Army, of course, ought to have done their own work, but the military authorities were at the moment overwhelmed with the urgent demands of the Army. The Admiralty took the matter up, because there was no other department to do it, since the War Office was pre-occupied. But as the Admiralty decided to undertake it, they should have realised the importance of their task and set about it properly. Had they done so, London, by the end of 1914, could have been defended by at least fifty guns, with serviceable ammunition; instead of which, after fourteen months of war, London was defended by twelve guns firing ammunition which did more harm to the population than to the Zeppelins. Of course, I see the matter in a vacuum, so to speak, and at the time there was an enormous pressure on the Naval authorities, who, after all, were engaged in defending the whole Empire by commanding the sea. London's air defence was a kind of "extra turn."

General Galliene, who was in charge of the defence of Paris, had for the protection of his forty-nine square miles of city two hundred and fifteen guns, and was gradually increasing this number to three hundred. He had plenty of men trained in night flying, and well-lighted-up aerodromes. I had eight guns to defend our seven hundred square miles of the metropolitan area, no trained airmen, and no lighted-up aerodromes.

This was the state of affairs when the Admiralty handed the blunder over to me. To cheer me up they informed me that they could not give me any more guns at once, and that, although they had been experimenting for ten years, they had no time-fuse suitable for exploding high-explosive shell; the only guns they had mounted on mobile mountings were Maxims, which were of no use against Zeppelins; they had no airmen who could fly at night, and if they had had them they would have been of

no use, as there was no ammunition suitable for attacking Zeppelins.

It was quite true that we had no bullets suitable for airmen to use in attacking Zeppelins, but we might and ought to have had, for a suitable bullet had been submitted in 1914. It was a new idea, so it was turned down. Its history is worth recording as a fair example of officialism. The inventor was a Mr. Pomeroy, a New Zealander. His bullet was first tried in 1908, with satisfactory results; in 1914 he submitted it to the War Office, who rejected it. In June, 1915, another trial was held and was successful, but the bullet was not accepted and brought into use until the autumn of 1916. The country had to wait two years for what was urgently wanted, and we were at war.[1]

Little or nothing having been done, it was very easy to do something, and as Captain Stansfeld, C.M.G., R.N., the head of the Anti-Aircraft Department, was a most efficient officer, and had under him a very capable staff, we quickly got to business.

The first thing was to find a satisfactory fuse. The Admiralty said that they had been ten years trying to get one and had not succeeded. One of my staff, Commander Rawlinson, C.M.G., D.S.O., solved the difficulty in ten minutes. The next thing was to get a design of high explosive shell which could be quickly manufactured. This was produced, but now the difficulty came. Having got the design, how were we to get the shell made? My proper course was to ask the Admiralty, but their system of administration, which is very sure, very slow, and very involved, would allow of nothing being done quickly;

[1] In 1916 our airmen and aerodromes were ready, and when the Zeppelins came over they got a very warm reception, numbers being brought down. The Germans lost their opportunity. For 15 months they could have come to London as often as they liked; we were late in preparing for them—they were late in coming.—P. S.

the paper work would have taken at least a month to get through. The Admiralty had to be avoided. So I took the designs over to Paris, and placed the order with a motor-car manufacturer, who executed the work well and quickly. In a very short time I saw my way to providing most of the guns used for the defence of London with satisfactory time-fuses and high-explosive shells.

Admiral Vaughan Lee, C.B., of the Air Department, realising the urgency of the matter, set to work. He undertook to get lighted-up aerodromes and trained men in night flying and we had a bullet that would set a Zeppelin on fire.

The next thing was to get more guns. I knew that the Navy had some they could spare and which could be converted into anti-Zeppelin guns. I applied to the Admiralty for these guns, and promptly got a very big "NO." I had anticipated this rely by writing to Sir John Jellicoe, the Commander-in-Chief of the Grand Fleet, and asking him for them. He promptly wired back that I could have twenty.

We extracted out of the Admiralty with difficulty another fourteen guns; Lord Kitchener very promptly gave me some; and with others that we picked up I found that in a very short time we had increased our number of guns from twelve to one hundred and eighteen. But, unfortunately, mountings had to be made for these, which took a considerable time.

The few guns we had for the defence of London were mounted permanently in positions probably as well known to the Germans as to ourselves. We had no efficient guns mounted on mobile carriages which could be moved about and brought into action where necessary.

The French, I knew, had some of their splendid 75 mm. guns mounted on automobile carriages. I suggested to the Admiralty that they should ask the French

Government either to supply or loan me one to copy. This they agreed to see about, and I have no doubt that in a few months they would have got the necessary papers through. However, I was determined not to work their way. I wanted the gun, not papers, so I ordered Commander Rawlinson, a very clever officer who spoke French like a Frenchman, to go over to Paris at once and either beg, borrow, or steal a gun.

I told him he was to have it on the Horse Guards Parade, under Mr. Balfour's window, in less than a week. He was in a motor-car at the time. Looking at his watch, he said, "I can catch the boat." I asked him if he did not want any clothes. He said, "No. Please wire Folkestone to ship me and the car over to France." Thus he left, going at about fifty miles an hour down South Audley Street. That is the sort of officer that is wanted in war-time! Twenty-four hours after leaving me he wired: "Have got gun, two automobiles, and ammunition."

What he did is best described in his letter to me, which was as follows:—

"22nd September, 1915.

"Sir,

"In obedience to your order that I should endeavour to obtain from the French Government a 75 mm. anti-aircraft gun, mounted on an automobile, on the 16th September I proceeded to Paris.

"I first interviewed General Galliene, who in a most courteous and charming manner pointed out that, much as he would like to help London, he could not himself give me a gun, but he felt sure that General Joffre would give full consideration to anything that London wanted.

"I proceeded to Chantilly and saw General Pellet, the Chief of General Joffre's Staff, and without any delay a telephone message was sent to the Minister

of War in Paris telling him that I could have the gun complete with two automobiles and ammunition.

"The gun in my presence was tested and fired by a French crew, who also very kindly drove it to Boulogne and shipped it to London, where it arrived on the 21st.

"The whole transaction from the time of my leaving London to my return with gun took four days.

"I attach photographs of the gun and caisson.

"I have the honour to be, Sir,

"Your obedient servant,

"A. Rawlinson."

Owing to the promptitude of Commander Rawlinson, we had this gun on the Horse Guards Parade, under Mr. Balfour's window, before the official letter asking for it was written.

Although this was only one gun, its acquisition was very valuable, as it showed us what could be done, and how to do it. The rapidity of the French decision ought to have taught our deliberate Admiralty a lesson, but it did not; nothing could put any life into their movements.

With the French gun as a guide we very soon mounted up eight of our own three-pounders on motor-lorries, which gave a start to the mobile section of our defence.

There was an urgent need for mobile guns. I should have liked to copy the French auto-car mounting, which was a fine specimen of engineering, but our three-inch guns could not be adapted to it. The problem, consequently, was to devise a mobile contrivance which would carry a three-inch gun of the ordinary service pattern. It was desirable to employ for the purpose only one motor-lorry, instead of two, as in the case of the French gun; I realised, moreover, that the design would have to be of such a character that the manufacture could

be undertaken by a firm not making gun-mountings or other urgent war material, as all such concerns were already fully occupied with work.

By a stroke of good luck I happened to meet Mr. R. E. L. Maunsell, chief engineer of the South-Eastern Railway Company, whose works are at Ashford. I spoke to him about the matter, and found that he was a man of the type of Sir David Hunter at Durban—ready to undertake anything. He grasped the idea at once, although he had never seen a gun or mounting before. Later on we called in Commander Rawlinson and Mr. Whale, a clever designer of Sir W. G. Armstrong, Whitworth and Co., and a drawing was soon prepared. The design was based on the 4.7-in. gun platforms that I improvised for use at Ladysmith, but it was arranged that the mountings should be made of steel instead of wood. It was decided to have an axle-tree and a pair of wheels under it, these being removable when the gun came into action. A special feature of this mobile platform was that its weight on the lorry could be altered according to whether the gun was being conveyed up or down hill. The experimental lorry was given a severe trial, and we found out that it could travel at the rate of thirty miles an hour, and that it remained perfectly stable when the gun was fired. The rapidity with which the work was done and the character of the work reflected great credit on the staff of the South-Eastern Railway Company at Ashford.

The housing of these guns and their crews was momentarily a difficulty, but the Grand Duke Michael of Russia came to the rescue and offered to house the hundred men and guns in the grounds of his beautiful house at Kenwood, Hampstead. Mrs. Wrey kindly lent her house for the accommodation of the officers.

Although the Admiralty did not give me any as-

sistance as regards the defence of London, they wanted me to comply with their slow and unsatisfactory routine. But we were at war! Had I submitted it would have taken me fifteen months to get twelve guns, whereas I was aiming at getting one hundred and fifty guns in six months. So I did not agree, and wrote to Mr. Balfour as follows:—

"18th October, 1915.

"Dear Mr. Balfour,

"On the 10th September you asked me if I would take the gunnery defence of London under my charge. I accepted, and in doing so, considered that you intended me to procure what was necessary for the gunnery defence of London.

"Up to last week I was led to believe that the Admiralty had ordered guns for the defence of London.

"On Friday, the 15th, you informed me that they had not done so. I at once ordered some guns. The firms with whom I placed the order wrote to the Admiralty for confirmation. The Admiralty have not confirmed the order.

"If I am to be responsible for the gunnery defence of London, I must be allowed to do things in my own way, and not be interfered with by the Admiralty. If the Admiralty are to settle what guns are to be used for the defence of London, and how they are to be obtained, then they become responsible for the gunnery defence of London, and I resign.

"If I am to remain in charge of the gunnery defence of London I must have a free hand to procure what is wanted how and best I can, and not to be handicapped by Admiralty red-tapism.

"Percy Scott,
"Admiral."

Mr. Balfour kindly arranged that my work should not be hampered by the ordinary Admiralty red-tapism, so I was able to go ahead, and the defence of London, as far

as guns were concerned, advanced rapidly. But not rapidly enough, so I went over to France to see if the French would help me again. When I told General Galliene the number of guns we had, he laughed and expressed surprise that the Zeppelins did not come every day. He was a splendid officer and promptitude itself. Five minutes' conversation and it was decided that I should have thirty-four of the famous French seventy-five millimetre guns and twenty thousand shells, with fuses complete. This brought our total up to one hundred and fifty-two. They were rather a mixed lot—Mr. Asquith referred to them as rather a menagerie—but I went on the principle that any guns were better than no guns.

10	4.7 guns.
7	4-inch guns.
35	French 75 millimetre guns.
4	4-inch Greek guns.
20	15-pounder B.L.G.
12	2.95 Russian guns.
34	6-pounder guns.
19	3-inch guns.
11	3-pounder guns.
152	

On the 27th November I received a letter from Mr. Balfour in which he told me that the long-drawn negotiations for the transfer of the defence of London against aircraft to the War Office were coming to an end, and with characteristic consideration he proceeded to give me warning that the change was imminent. It was a kindly act on the part of the First Lord which I highly appreciated, and when I read the paragraph of the letter in which he referred to what I had been able to do, I felt that perhaps I had after all rendered some service to London.

I was proud to have been associated with the Anti-

Aircraft Corps. In my opinion, considering its size and the circumstances in which it was raised and trained, it was the most efficient as well as the cheapest unit in the country's defence organization. It was a voluntary *corps d'elite,* composed of University men, barristers, artists, and City men. They were men of brains who, moved by patriotic motives, put on the uniform of petty officer or able seaman and submitted in a splendid spirit to the necessary conditions of service. Before I took command of the corps, I had read criticisms suggesting that it was of little use and that the officers and men knew nothing about gunnery. Those criticisms were ill-founded, for the Corps included a number of members peculiarly well qualified by mathematical or mechanical training to pick up the rudiments of gunnery. This they had done very quickly. The members of the Anti-Aircraft Corps, in fact, laid the foundations of the elaborate system of anti-aircraft defences which eventually taught the Germans that London was an unhealthy spot.

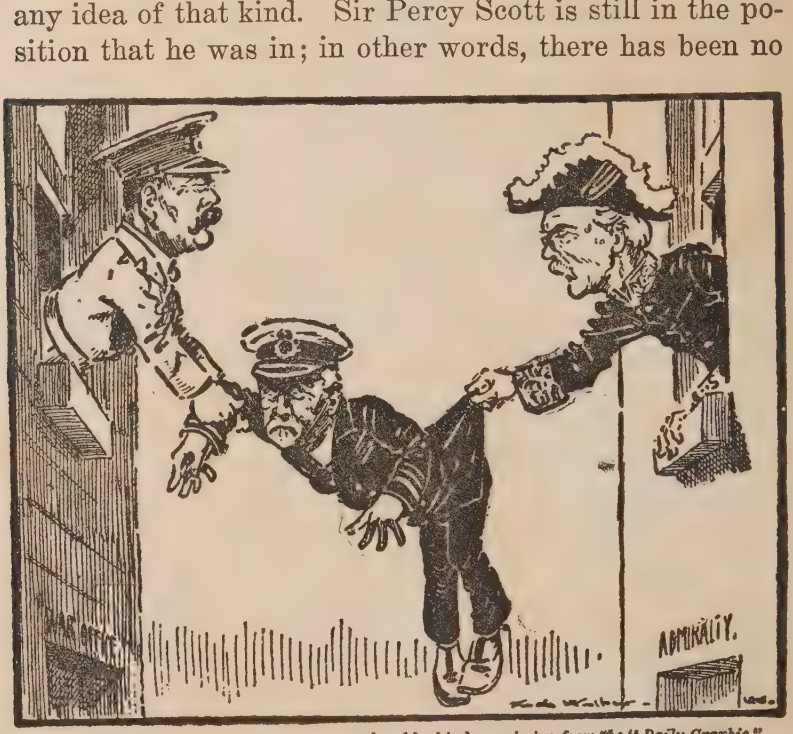
The First Lord himself, though he is not a man of business training, did more for the defence of London than any one when he cut me free from the Admiralty red-tape methods. Without that I could have done little.

At noon on the 16th February, 1916, the War Office took over the gunnery defence of London, and consequently I was no longer responsible for it. I had commanded it for five months and six days. As my scheme of defence was not complete, it seemed a pity that new people with new ideas should take it over, but we did many peculiar things during the war.

On the evening of the day on which I had turned over all responsibility for the "Defence of London" to Viscount French, Mr.—now Sir—Joynson Hicks, in the House of Commons, asked the following question:—

"Has Sir Percy Scott now finished, has he no longer anything to do with it?"

Mr. Tennant, on behalf of the War Office, replied: "I hope that the hon. gentleman will not go away with any idea of that kind. Sir Percy Scott is still in the position that he was in; in other words, there has been no



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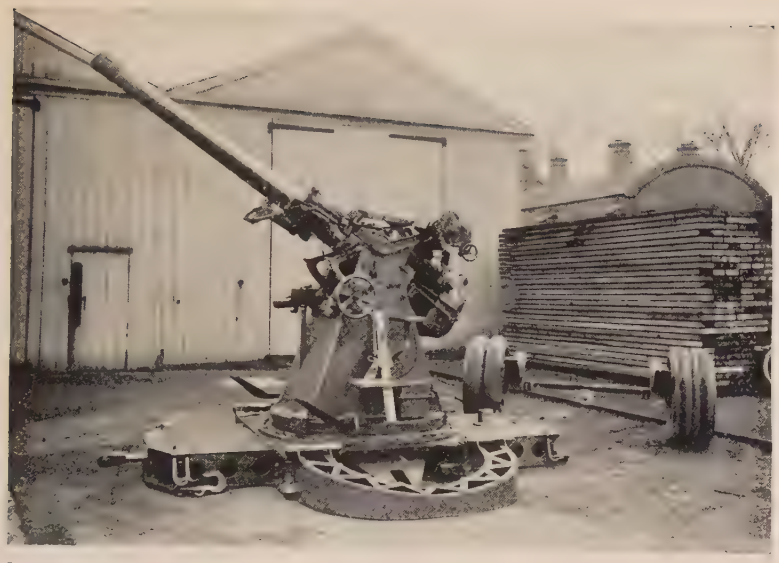
IN MID-AIR.

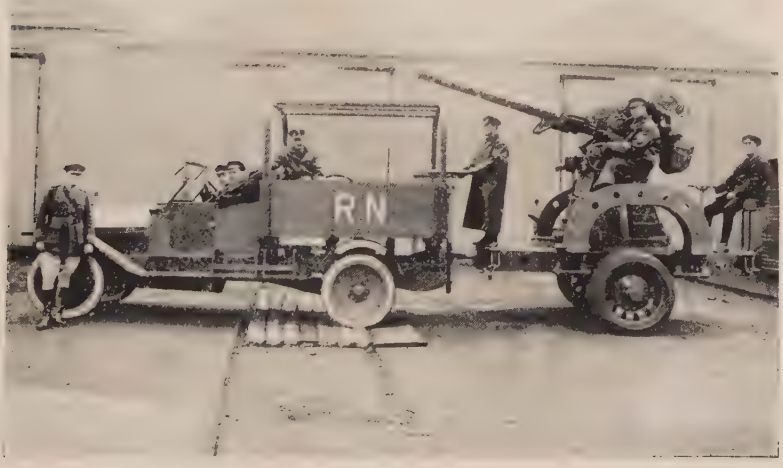
"Mr. Ellis Griffith said he understood that Sir Percy Scott was in a state of suspended animation. He had not quite left the Admiralty or quite joined the War Office, but he was in the process of doing both."—House of Commons Air Defence debate.

change in his position. What may ultimately be agreed upon I do not know."

As I was *not* in the position that I was in, and as there had been a change, Mr. Tennant's reply was not in



3-INCH ANTI-AIRCRAFT GUN IN ACTION



3-INCH ANTI-AIRCRAFT GUN BEING TRANSPORTED
(Commander A. Rawlinson in charge)
THE DEFENCE OF LONDON AGAINST AIR ATTACK

[*Page* 300]

DUAL CONTROL.

"A KIND OF A GIDDY HARUMFRODITE—SOLDIER AN' SAILOR TOO."
Rudyard Kipling.

["Sir Percy Scott has not quite left the Admiralty and has not quite joined the War Office."—*Mr. Ellis Griffith, in the House.* Since this remark Lord Kitchener has announced that the Admiral is to act as expert adviser to Field-Marshal Lord French, who is taking over the responsibility for home defence against aircraft.]

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accordance with fact, but it was characteristic of many statements made by Ministers during the war.

Mr. Ellis Griffiths, M.P. for Anglesey, added that he understood that I was in a state of suspended animation, that I had not quite left the Admiralty nor quite joined the War Office, but I was going to do both.

This statement gave rise to some comic sketches and a cartoon in *Punch*.

On the following day I was asked if I would accept the post of Adviser to Field-Marshal Viscount French on air defence questions. I accepted; so we two, who fifty years before joined the Navy side by side, were working together again.

That really ended my association with the aerial defence of London, for the new appointment meant, really, nothing.

I have already mentioned the forebodings which I had before the war as to the influence which the submarine would have upon the course of operations; but before leaving the subject of air raids on London, I may add that I also foresaw that aviation was going to develop with great rapidity. A few years before the outbreak of the war, when the late Mr. F. T. Jane was preparing a hand-book on Airships and Aeroplanes, he asked me to write a few notes on the possibilities of aerial warfare. As I thought I could perhaps do some service in directing attention to this matter, I wrote a short statement which was published, with an admirable sketch.

> "The progress recently made in aviation and the existence of so many comparatively practical machines compel attention from every thinking man. The performances of the Zeppelins are sufficiently satisfactory to indicate that the time has arrived when the flying warship is a factor to be seriously reckoned with, but when I am asked to forecast the aerial

warfare of the future, I am confronted by a double difficulty. In the first place, I cannot claim sufficient technical acquaintance with the subject of flying to warrant discussing the matter closely. And in the second place, the details of any ideas that we may have on the subject of destroying airships are naturally confidential.

"As an adjunct to H.M. Navy, the useful function of an airship or aeroplane would appear to be in gaining information of the locality, strength, and disposition of the enemy's fleet, and so possibly unmasking his strategy. In this direction an airship's services would be invaluable, for it might not be possible to obtain the information in any other way.

"If it be allowed that an airship is of value as a scout to acquire information, then airships or aeroplanes we must have, but as the enemy will use similar appliances to watch our strategical operations, secrecy can only be arrived at by the destruction of his observers, and the method of aerial warfare becomes a subject for serious consideration.

"The heretofore only traversers of the air use beak and talon to destroy one another. The human aviator, having neither beak nor talon, must be provided with some means of offence, it may be a gun; if it is, then the aviator will realise that his safety depends upon whether the projectile out of his gun hits the mark aimed at or not, and accurate gunnery, that is *quick-hitting,* will in the air be as important as it is on land or on the sea in deciding a final issue. Whatever the weapons used are, practice with them will be necessary, and we may live to see two airships each towing a suitable target carrying out a test of their efficiency in *quick-hitting.*"

My forecast has at least some personal interest for me, in that in 1915, after the war had been in progress for several months, I saw target practice being carried out somewhat on the lines which I had suggested, a small airship towing a target and an aeroplane firing at it.

The whole idea was thought to be rather far-fetched at the time when I wrote, but events were to show that those who had confidence in the development of aviation for warlike purposes were not far wrong.

CHAPTER XIX

WAR REFLECTIONS—1915-1917

Guns for the Army—Visit to the Front—Inferior Elevation of the 9.2-inch Gun—The Mounting improved after Official Delay—Naval Searchlights—A Primitive Method—My Improved Design—A New System ultimately adopted—A Letter from the Admiralty—The Dardanelles Commission—A Question of Gunnery—The Essence of the Problem—A Criticism of the Report.

I was sent for by Mr. Balfour on the 9th July, 1915, to be informed that the Army was terribly in want of guns, and had approached him as to whether the Navy could give them some 6-inch. He asked if I could design a mounting for them which could be quickly constructed, and not necessarily by a gun-making firm, as they were all too busy. I explained to Mr. Balfour that this was just what I had offered to do nearly a year ago, that the Army had then declined the offer; but as they now wanted the mountings, I could easily and quickly get them made, provided there was no red-tape about it and I had a free hand to order Chatham Dockyard to make them. To this Mr. Balfour agreed; so I went to the War Office to inquire what they wanted. I found that they did not know what they wanted—rather a handicap to speedy construction—and it took a week for them to make up their minds.

On the 17th they decided that they wanted eight 6-inch guns, mounted on carriages which would allow of 25 degrees of elevation being used. I pointed out that they ought to have at least 35 degrees of elevation; but my remonstrance was in vain, for they would have only 25 degrees.

I got out a design—there was nothing in it, as it was practically the same as the one I made for General Buller in South Africa. On the 19th July Chatham Dockyard commenced the job. So splendidly did they work that by the 27th July most of the eight mountings were nearly completed, and one had been tested by firing a large number of rounds at different elevations.

On the 28th July the War Office altered their minds and wanted 35 degrees of elevation. I put the eight mountings that we had made on the scrap-heap, got out another design, and two days later Chatham Dockyard commenced again. The officers and men were rather annoyed at their ten days' work being wasted, but they went ahead with their former energy and in ten days one mounting was tested and the other seven were nearly completed. These guns turned out to be very useful at the front. They were the only long-range guns that they had.

On the 20th January, 1918, I paid a visit to the front and noted that the 9.2-inch guns had only 20 degrees of elevation. I pointed out to General Sir Henry Rawlinson that by putting a piece on top of the mounting, 35 degrees of elevation could be obtained, which would increase the range from 13,000 to 17,000 yards. Sir Henry considered it most important that the alteration should be carried out. On my return to England I wrote to Sir Wm. Armstrong, Whitworth and Co. for a drawing; they only took two days to complete it, and I forwarded it to Sir Henry Rawlinson. On the 28th March, 1916, Sir Wm. Armstrong, Whitworth and Co. were asked to fit four guns in this manner; that is to say, sixty-two days elapsed between that firm's dispatch of the drawing to me and their receipt of the order from the War Office to start the work. The job was, compara-

tively speaking, a small one, and it took only a short time to complete.

Here is a case where a bad mistake was made in the beginning, at the time the gun mounting was ordered, and, when the mistake had been pointed out, the authorities took longer to make up their minds whether or not to rectify it than the gun-makers did to alter the mounting. It is one of the thousands of such instances that occurred during the war, indicating that neither the Admiralty nor the War Office had any appreciation of the value of time and that even when at war they could not leave the beaten path of peace-time red-tapism.

In January, 1917, I paid a visit to H.M.S. *Centaur*, a new light cruiser flying the broad pennant of Commodore Tyrwhitt.[1] In the course of conversation the Commodore mentioned to me how hopelessly his squadrons were handicapped in any night action, as they were not supplied with any star shells which would illuminate the enemy, and their searchlights could not be effectively used. It was a strange thing that although we had used searchlights in the Navy for so many years, we had continued a system which was so unscientific that the operator at the searchlight could not get his light on to the target because the glare made it invisible. It was a method, as I have already remarked, which necessitated the employment of another man as an observer who, with his eyes on the object, would shout out "go right" or "left" or "up" or "down."

Lord Jellicoe points out in his book[2] that we were

[1] Afterwards Rear-Admiral Sir Reginald Tyrwhitt.

[2] "The possibility of a night action was, of course, present to my mind, but for several reasons it was not my intention to seek such an action between the heavy ships. It is sufficient to mention the principal arguments against it. In the first place, such a course must have inevitably led to our Battle Fleet being the object of attack by a very large destroyer force throughout the night. No senior officer would willingly court such an attack, even if our battleships were equipped with the best searchlights and the best arrangements for the control of the searchlights and the gunfire at night. It was, however,

inferior to the Germans in the power of our searchlights, and the control of them, and that our guns forming the secondary armament were not fitted for director firing, whereas the Germans had a good system. It was for these reasons that he did not seek a night action in the Battle of Jutland. The question is why had the Germans this superiority? They ought not to have had it and they would not have had it if suggestions put forward by British naval officers had been accepted.

On my way up to London from Chatham after my visit to H.M.S. *Centaur,* I thought out an idea, and took it to Sir John Jellicoe (then First Sea Lord). He made up his mind at once, and with characteristic promptitude, he ordered it to be proceeded with, but unfortunately after this he left the Admiralty and the invention took the ordinary course, that is to say, its adoption was delayed because the departmental officials wished as usual to introduce my idea in some other form which they could call their own. In this they partially succeeded, so at length the Royal Navy secured a method of controlling their searchlights which had been badly needed for forty years.

After the departure of Sir John Jellicoe from Whitehall, I had nothing to do. I was supposed to be adviser to the Admiralty on gunnery matters, but they did not keep me well enough informed to advise them, and when

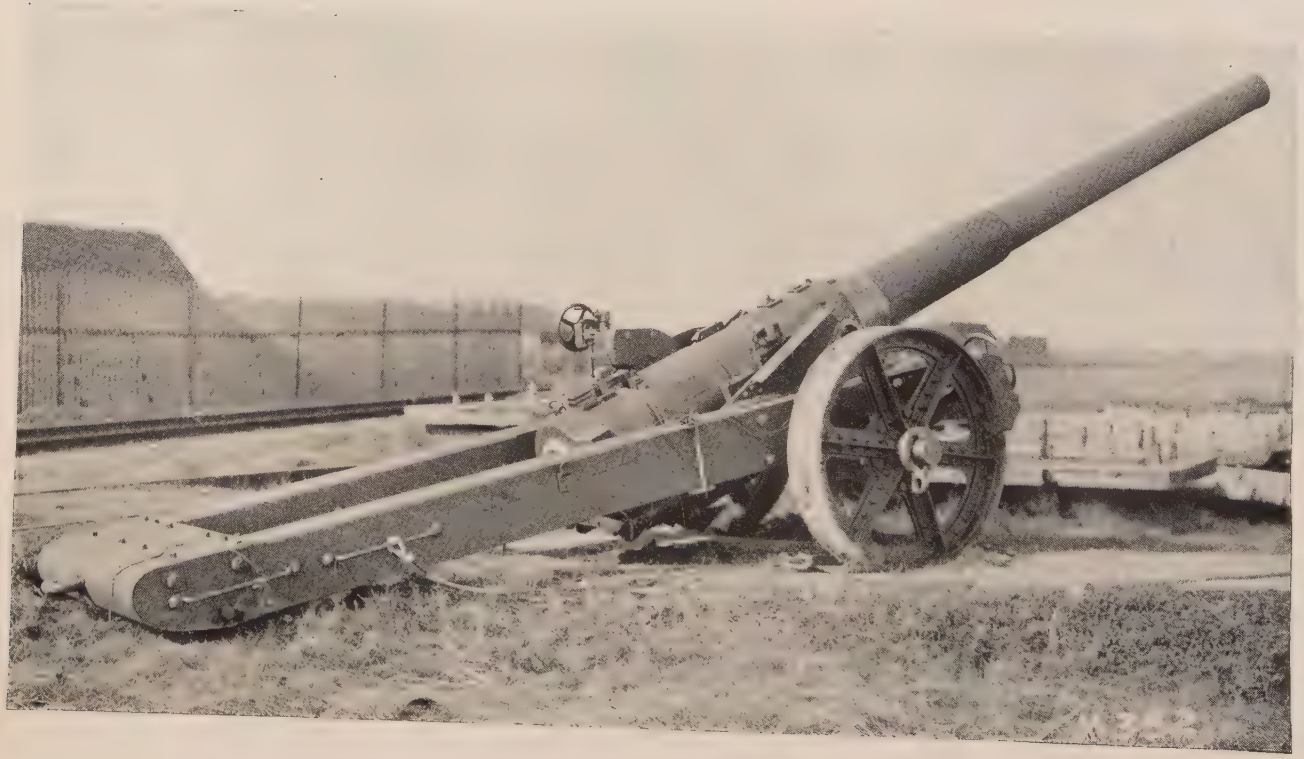
known to me that neither our searchlights nor their control arrangements were at this time of the best type. The fitting of director-firing gear for the guns of the secondary armament of our battleships (a very important factor for firing at night) had also only just been begun, although repeatedly applied for. The delay was due to manufacturing and labour difficulties. Without these adjuncts I knew well that the maximum effect of our fire at night could not be obtained, and that we could place no dependence on beating off destroyer attacks by gunfire. Therefore, if destroyers got into touch with the heavy ships, we were bound to suffer serious losses with no corresponding advantage. Our own destroyers were no effective antidote at night, since, if they were disposed with this sole object in view, they would certainly be taken for enemy destroyers and be fired on by our own ships."—"The Grand Fleet, 1914-1916," pp. 373-374.

I gave them advice they did not take it. That the country should in these circumstances be paying me annually £1200, the difference between my full pay and retired pay, seemed to me indefensible, and early in 1918, I pointed out to the authorities that as they would not give me anything to do I would do what I could without robbing the country of £1200 a year.

There remains one of the choicest of my collection of Admiralty communications to be mentioned. In August, 1916, I received a letter from the Admiralty in which they informed me that they had received "with much satisfaction a report from the Commander-in-Chief, Home Fleets, representing the admirable manner in which the ships of the Home Fleets have been fitted with director-firing gear." The letter conveyed to me "their high appreciation" of the valuable services which I had rendered in connection with the design and manufacture of this gear and their thanks for "the diligence and care with which I had carried out the arduous work which devolved on me both before and during the War and which had resulted in this system being completed in *all the capital ships of the Home Fleets.*"

The Commissioners for executing the office of Lord High Admiral have often written absurd letters to me. One would like to know what was in the brain of the writer of this particular communication. Was it thought that I should show it to the Germans in order to convince them that all our capital ships were fitted with director firing? To attempt to camouflage the facts for my benefit was useless, since I knew very well which of our capital ships were so fitted, and I knew that at the rate their Lordships were proceeding all our capital ships would not be completed before the War was over, as, in fact, they were not.[1]

[1] Cf. "The Grand Fleet, 1914-1916."



FIELD CARRIAGE FOR 6-INCH MARK VII. GUN FIRING A 29-LB. CHARGE

While on the subject of gunnery, I cannot forbear mentioning another war matter which greatly interested and afterwards amused me. Under the Special Commissions (Dardanelles and Mesopotamia) Act, 1914, Royal Commissioners were appointed to inquire into the origin, inception and conduct of the operations in the Dardanelles. Lord Cromer was the President, the Army was represented by Field-Marshal Lord Nicholson, and the Navy by Admiral of the Fleet Sir William May.

I must comment on their report [1] because it reveals some very strange facts in connection with a subject that I have studied nearly all my life—Gunnery.

The idea that the battleships of the Mediterranean Squadron could reduce the forts and guns protecting the Dardanelles sprang from a sad want of knowledge. The authorities responsible for the mistaken idea were impressed by the success with which the German guns had reduced the Belgian forts, and concluded that in the same way ships' guns could reduce the Dardanelles forts. This deduction was due to a failure to realise the difference between firing on land and firing from a ship.

Referring to the reduction of the Belgian forts, Lord Grey said,[2] "The experience of this war was supposed to have changed the prospect of successful attack upon forts and made successful attack upon forts a practical operation where it had not been a practical operation before." As to that, I would observe that the war had not changed the prospect of successfully attacking forts or land guns by naval guns; all recent wars have demonstrated that on land you can successfully attack forts or guns if you can locate them, and during the war new methods were in use for locating them.

Mr. Winston Churchill, in the course of his evidence,

[1] The Report cost the country £4850.
[2] "Dardanelles Commission Report," p. 24.

said, "This war had brought about many surprises. We had seen fortresses reputed throughout Europe to be impregnable collapsing after a few days' attack by field armies." I do not think that the war brought surprises to those who knew anything about artillery fire. If the statement that all Europe thought the Belgian forts impregnable is correct, then all Europe was very ignorant. I cannot agree with Mr. Winston Churchill, for I am quite sure that no officer with any knowledge of artillery fire would consider any fort impregnable from guns on land. Here we had a very wrong supposition and an even more erroneous idea, and these two wrongs were the basis for the authorities' decision that the obsolescent battleships in the Mediterranean could successfully attack the Dardanelles.

For the destruction of the Namur and other Belgian forts, the Germans could place their guns where they liked, and by camouflage conceal them from even the eyes of an aeroplane; they could obtain the range to a yard and could employ balloons to observe and direct their fire; the destruction of the forts was therefore not a difficult task. The forts were helpless; they were shelled by weapons they could not see, and they had no target to fire on. A parallel case to this existed later on, when a number of obsolescent ships of the Allies in the Mediterranean were ordered to attack the shore guns of the Turks. The shore guns could hide themselves and, by means of scientific methods, fire at the ships, although unable to see them. The ships could not hide themselves and could not fire at the shore guns because they could not see them.

The main difference between sea and land gunnery as exhibited at the time of the Dardanelles operations was that in the ships the gunners, in order to fire effectively, had to be able to see the object they were fir-

ing at, whereas on the land this necessity did not exist; a hill could be between the land gun and the target, but it would not affect the accuracy of fire. This is so important a point that I wish to make it quite clear to my readers. In order that a shot from a gun may reach an object, the distance of the object must be known, and the gun pointed up into the air at an angle which varies with the distance. This angle is called the angle of elevation, and can be applied to the gun in two different ways:

(*a*) By clinometer.

(*b*) By direct observation.

A clinometer is practically a pair of nutcrackers with an ordinary level attached to one handle. You separate the handles of the nutcrackers to the angle that the range requires, then put the nutcrackers on to the gun, and when the bubble of the level is in the middle you know that the gun is at the correct angle of elevation. This is what is called pointing the gun by clinometer and is the system generally used by guns on shore. This method cannot be used on board a ship, as the bubble of the level would never be steady on account of the vessel's motion, so the ship gunner looks along the top of the nutcracker handle and, when he sees it in line with the object to be hit, he knows that the gun has the correct elevation. Hence when firing from a ship the gunner must be able to see the object that he is firing at.

The fact that the gunners on board the ships could not fire unless they were able to see the object they wished

to hit is another very important detail. Let me try and make it quite clear.

Here we have a gun on shore with a hill intervening between it and the ship at sea. It is obvious that the gunners on shore cannot see the ship, and the gunners on board the ship cannot see the gun on shore. Notwithstanding that neither opponent can see the other, the gun on shore can fire at the ship, because it can be given the correct elevation by a clinometer or level; on the other hand, the ship cannot fire, because the gunners on board cannot use a clinometer. Herein lies the difference between ship and shore gunnery.

Whether the obsolescent ships in the Mediterranean, unsupported by the Army, could be expected successfully to attack guns on shore, was purely an artillery question; it was to be a duel, and before deciding on the duel, the authorities should have carefully investigated the case to see which side was likely to win. Had they done so, they would have found that the chances of hitting were decidedly in favour of the shore guns, for the following reasons:—

(1) A concealed battery can fire at a ship, but the ship cannot return the fire.

(2) The shore guns can use a clinometer; ships cannot.

(3 The shore gun fires from a steady platform; the ship gun fires from a rolling platform.

(4) From the shore the range of the ship can be accurately obtained, as a long base can be used for range finding, while the ship can only use a short-base range-finder.

(5) Even if the shore gun is visible from the ship, it is a very small target to aim at, whereas the ship is a very large target.

(6) The shore gun, when visible, is not easy to locate from its surroundings, whereas the ship stands out on the sea like a black bull's-eye on a white background.

(7) Observation of fire is much easier to judge accurately when the projectiles are falling in the sea than when they fall on land.

(8) The ships that were told off to carry out the bombardment (with the one exception of the *Queen Elizabeth*) were unable to fire at a long range because their guns could not be given sufficient elevation; they were not efficiently fitted for firing their guns by broadsides; and they could not fire their guns from aloft, which is essential when using them at long range.

With all these advantages on the side of the shore guns, it is obvious that the ships alone could not defeat them, and the authorities should not have made the attempt.

In 1916 it was decided, as I have recalled, to have a Commission of Inquiry into the origin, inception, and conduct of the operations in the Dardanelles. With regard to the "inception," or to put the matter in plainer English, whether the obsolescent ships selected for the operation could defeat the Dardanelles guns or not, the Commission [1] state, "*The arguments involved in the consideration of this subject are of so highly technical a character that none but specialists can express a very confident opinion on them.*" The reasons given by me as to why the inception was wrong do not embrace a very high technical knowledge.

I have seen the Royal Navy change from sails to steam, from fighting on the water to fighting under the

[1] "Dardanelles Commission Report," p. 24.

water and over the water. What is the future Navy to be? Some officers say that the battleship is more alive than ever; others declare that the battleship is dead. I regarded the surface battleship as dead before the War, and I think her more dead now, if that is possible. The battleship of to-day costs roughly £8,000,000; she carries about 1000 shells containing about 100,000 lbs. of high explosives; her effective range is, say, 15 miles, she is vulnerable to aircraft with bombs and aerial torpedoes, and to submarines, the latter possibly carrying a 15-in. or 18-in. gun; and the ordinary automobile torpedo is still in process of development, and may, in the future, carry a ton of high explosives, which would probably sink any battleship.

For £8,000,000 we could build many aeroplane-carrying ships, equipped with aeroplanes carrying over 100,000 lbs. of high explosives. If these aeroplanes carried fuel sufficient for five hours, their range would be about 150 miles out and 150 miles home.

In the battleship we put all our eggs into one basket. In peace-time the aeroplane-carrying ships could be used as passenger ships, and the aeroplanes for carrying passengers instead of bombs.

As to relative cost of upkeep, the single battleship would require in peace-time about—

	Pay
40 officers	£8,000
800 men	60,000
Provisions and stores	30,000
Coal	10,000
	£108,000

Say £120,000 a year. The aeroplane-carrying ships and the aeroplanes would cost nothing; they would be earning money. The officers and men to form the crews of the ships would belong to the Merchant Navy. Aero-

plane pilots will be as numerous as taxi drivers and get about the same pay. The battleship waddles along at twenty miles an hour, and cannot waddle very far, and in comparison with an aeroplane has a very low rate of speed.

The object in war is to introduce high explosive materials into your enemy's ships or country; transmitting this high explosive by guns is expensive as the container of the high explosive has to be very strong, and consequently very heavy, to withstand the shock of discharge. It takes a battleship weighing 30,000 tons to carry 100,000 lbs. of this explosive. Ten aeroplanes weighing about three tons each would carry the same amount, so the relative weights of the carriers is as 30 tons to 30,000 tons.

When the battleship nears the end of her coal or ammunition, she must waddle home at about the same speed as a South Eastern Railway train (I am told that this is the slowest line on earth), and it takes her several hours to fill up even if she uses oil fuel. The aeroplane does not waddle home, but comes back at 100 miles an hour, and it takes three minutes to fill her up with fuel and ammunition. The future is with the aeroplane, which is going to develop rapidly in the next few years. Probably we shall also have submersible battleships of 10,000 tons. What chance will the surface battleship, presenting a huge target, have against such a vessel?

My task is completed, for from the summer of 1916 to the end of the war neither the Admiralty nor the War Office had further need of any services I could render. As I had retired in the year preceding the beginning of hostilities, I was fortunate in being able to take some part, however small, in the prosecution of the War on the water, under the water, on the land, and in the air.

This war work rounded off my career, and as I lay down my pen my thoughts turn to the old *Britannia* which I entered as a boy. The ship has disappeared and my companions of those early days have had varied fortunes in life. Of the sixty-four little boys who embarked on board H.M.S. *Britannia* in 1866, two only rose to the rank of Admiral, while another left the Navy for the Army and became a Field-Marshal and a peer. Looking backwards, thoughts and incidents crowd one's mind, and I have felt inclined, in reading through this manuscript, to make additions here and deletions there. But, after all I set out merely to write down the more or less random recollections of my fifty years in the Royal Navy, and it must go forth with whatever faults the reader may notice.

APPENDIX I

PROGRESS OF GUNNERY

THE following statement, based on the returns of gunlayers' competitions, indicates the progress in gunnery, 1897-1907:—

In 1897, 69 shots out of every 100 fired missed the target.
" 1898, 69 " " 100 " " "
" 1899, 69 " " 100 " " "
" 1900, 68 " " 100 " " "
" 1901, 64 " " 100 " " "
" 1902, 59 " " 100 " " "
" 1903, 54 " " 100 " " "
" 1904, 58 " " 100 " " "
" 1905, 44 " " 100 " " "
" 1906, 29 " " 100 " " "
" 1907, 19 " " 100 " " "

—	1897.	1898.	1899.	1900.	1901.
Number of ships that fired.....	109	139	136	121	127
Number of guns.....	846	1,010	1,121	1,031	1,137
Number of hits.....	2,052	2,527	2,831	2,732	3,562
Number of misses.....	4,389	5,436	6,249	5,709	6,244
Excess of hits over misses.....	Nil.	Nil.	Nil.	Nil.	Nil.
Excess of misses over hits.....	2,337	2,109	3,418	2,977	2,682
Percentage of hits to rounds fired.....	31.86	31.63	31.1	32.3	36.3

——	1902.	1903.	1904.	1905.	1906.	1907.
Number of ships that fired.....	139	134	108	100	89	121
Number of guns.....	1,241	1,296	1,171	1,096	1,073	1,365
Number of hits.....	4,789	5,996	5,748	4,374	5,733	**7,547**
Number of misses.....	6,863	7,028	7,664	3,357	2,328	1,991
Excess of hits over misses.....	Nil.	Nil.	Nil.	1,017	3,405	5,556
Excess of misses over hits.....	2,074	1,032	1,916	Nil.	Nil.	Nil.
Percentage of hits to rounds fired	41.1	46.04	42.86	56.58	71.12	79.13

APPENDIX II

APPENDED are several communications with reference to my period as Commandant at Durban, to which are added the remarks of Earl Spencer in the House of Lords, when he referred to the part which the Navy was privileged to take in assisting in the defence of Ladysmith and in administering martial law in Durban during the critical period.

On the 10th March I received the following from H.E. the Governor—

Natal,
No. 44.

Government House,
Pietermaritzburg, Natal,
9th March, 1900.

SIR,

I have received from the Admiral a telegram, informing me that H.M.S. *Terrible,* under your Command, is to sail shortly for the China Station, and requesting me to make provision for the appointment of an officer to take your place as Commandant of Durban.

2. I have been in communication with the General Officer Commanding on the subject, and I believe an officer will shortly be appointed. In the meanwhile I desire to express my sincere regret that our pleasant official relations are about to be severed; and my high appreciation of the firmness, judgment and tact with which you have discharged your difficult and responsible duties as Commandant of Durban throughout the four critical months during which you have held the appointment.

3. I desire also to express to you, on behalf of the Government and people of Natal, the thanks of the Colony for the effectual aid which was rendered by you and by the officers and men of the Royal Navy under your command in the matter of the defence of the Colony from the inroads of the Boers. Your services in that regard will always be remembered in Natal with feelings of warm appreciation and heartfelt gratitude.

I have the honour to be,
Sir,
Your most obedient servant,
(Signed) WALTER HELY HUTCHINSON.

Captain Percy Scott, R.N.,
H.M.S. *Terrible,*
Senior Naval Officer, Durban.

On the 14th I sent in a dispatch which was as follows:—

Commandant's Office,
Durban,
14th March, 1900.

YOUR EXCELLENCY,

I have the honour to report that I have this day been relieved of my duties as Commandant of Durban, which I assumed on the 7th November, 1899.

2. *Spies.*—During this term of office my department has had to deal with all matters of spies and suspected persons, of whom there are at present several still under detention in the gaol at Durban, numbers of others having been examined and dealt with, or sent on to Pietermaritzburg or elsewhere. There are still a large number of suspects detained in Durban on parole or under supervision.

3. *Passengers.*—There has also been the supervision of all passenger traffic up and down the coast, and the dealing with applicants for leave to go to Delagoa Bay and East Coast ports. In this I have been very ably assisted by the local officials of the Criminal Investigation Department, under the control of Sergeant Brooke of the Natal Police, who has carried out very difficult and troublesome work to my entire satisfaction.

4. *Martial Law.*—This department has also, in conjunction with the Censor, had to deal with the examination and dispatch of letters opened under Martial Law and telegrams of a suspicious nature. Mr. T. O. Fraser, the Censor, has rendered very valuable assistance.

5. *Customs.*—The question of detaining goods intended for the enemy, and preventing trade with the enemy from being carried on, has been a matter of considerable importance, and in connection with it I wish to bring to your notice the good services rendered by Mr. Mayston, the Collector of Customs.

6. *Police.*—With regard to the administration of Martial Law, in addition to the special matters mentioned above, there has been the general supervision and maintenance of order in the town to deal with. Superintendent Alexander of the Borough Police has co-operated with me so successfully that no difficulties have arisen. A system of night passes after 11 p.m. was introduced to enable the police, who are limited in number, to keep the streets clear at night of all suspicious persons; and so generally to protect the burgesses and their property in a way which they could not otherwise have done, owing to the fact that there are, and have been for a long time past, many of the worst of the Transvaal and Free State criminals at large in and about Durban.

7. *Banks.*—I have had to deal also with the banks, in connection

with the carrying out of his Excellency the High Commissioner's regulations with regard to financial arrangements, and am glad to be able to say that all the banks have given me every assistance, and Mr. Harrison, Government Inspector of the National Bank of the South African Republic, has proved himself of great value in carrying out the regulations.

8. *Recruiting.*—A Recruiting Depôt for Colonial Forces has been established at my office, and has sent forward a large number of men.

9. *The Port.*—All work in connection with the Port has been made very light in consequence of the ready way in which Captain Ballard, the Port Captain, has always responded to any request from my office, and always done everything in his power to assist the men-o'-war and transports.

10. *The Staff.*—With regard to the officers of my Staff, I wish to bring to your particular notice the eminently good service which has been rendered me by Major Bousfield, a Reserve Officer of the Natal Volunteer Force. He was appointed by Your Excellency at the beginning of my term of office, and has been my right-hand man throughout. His local knowledge was of great assistance to me in the disposition of the guns for the defence of Durban, and his legal knowledge has been invaluable to me in dealing with many of the intricate matters which have come before me. I hope that Major Bousfield will receive some mark of appreciation of the good services he has rendered. Mr. Cullinan, Assistant Paymaster of H.M.S. *Terrible*, has acted as my secretary. With telegrams coming in all day and all night, and all the correspondence, both naval and military, having to be dealt with, his work has been continuous, but always carried out in a most satisfactory manner.

11. *Defence—Commander Limpus.*—I attach a detailed account of the defence of Durban, and in connection with it wish to bring to your favourable notice the great assistance I received from Commander A. H. Limpus, of H.M.S. *Terrible*. It was owing to this officer's hard work and untiring energy night and day that I was enabled to get the mountings ready in time.

I have the honour to be,
Your Excellency's obedient servant,
(Signed) Percy Scott,
Captain R.N. and Commandant.

To his Excellency
Sir Walter Hely Hutchinson, K.C.M.G.,
Governor of Natal,
Pietermaritzburg.

DEFENCE OF DURBAN, 1899.

SIR,

In obedience to orders, I arrived in H.M.S. *Terrible* at Durban on the 6th of November, and took over the defence of the town.

On the 7th the positions were surveyed, and on the 8th the Defence was placed.

Herewith I have the honour to forward details of the Defence and other information in connection with the subsequent use to which the guns were put.

I have the honour to be,
Sir,
Your obedient servant,
(Signed) PERCY SCOTT,
Captain R.N.

To the General
Commanding the Forces
in Natal.

DEFENCE OF DURBAN.

A. Position of Guns, and Precautions against attack.

B. Protection of Water Supply.

C. Withdrawal of Bullion from Banks.

D. Care of Confidential Records from Government House, Pietermaritzburg.

DEFENCE OF DURBAN.

To the Northward.

One 4.7-inch and six 12-pounders are in positions on the Berea Ridge, commanding all the main roads and approaches from the northward.

To the Eastward.

Six 12-pounders are in positions to command the Umgeni Bridge and Valley. This valley is also commanded by guns at the entrance to the Umgeni River.

To the Westward.

Six 12-pounders are in position to sweep the open country west of Claremont.

Two 6-inch guns in the Bluff Fort are manned and can command both the eastern and western approaches to the town.

Two armoured trains are on the line with 3-pounders mounted on them; one train works to Claremont, the other to Umgeni, so as to be able to rapidly reinforce any section of defence which requires it.

H.M. ships *Terrible, Forte* and *Thetis* are anchored in a position to command the Umgeni Valley. H.M. ships *Philomel* and *Tartar* are in readiness to move round and operate against any movement on the Bluff side.

The necessary scouting and patrolling has been undertaken by Colonel Bethune with his locally raised Mounted Infantry, the Rifle Associations of the outlying districts assisting.

It is anticipated that nothing could pass through this cordon. Should it, however, be forced, a further detachment of 300 Marines with Maxims and rifles are in readiness to land, and assisted by the two Town Rifle Associations, dispute the streets at the barricades which have been arranged.

Protection of the Water Supply.

After consultation with his Worship the Mayor and the Right Honourable Harry Escombe (an officer of the Natal Volunteer Force), it was decided only to hold the Umlaas Main Works, and the conduits therefrom.

To meet this two 12-pounder guns were mounted on the summit of a hill which commands the Water Works and the main road from Richmond. The position was strongly entrenched and held by a party of seamen and Marines.

The Right Honourable Harry Escombe made arrangements for patrolling the conduits and surrounding country with a force organised by him, augmented if necessary by the Rifle Association of the Coast Districts, which H.E. the Governor had called out for active service.

Withdrawal of Bullion from Banks.

Arrangements were made that, in the event of the necessity arising, H.M.S. *Philomel* should send up guards to the various banks to escort their bullion down to the point of embarkation from whence it would have been transferred to H.M.S. *Terrible* according to detailed arrangements previously made with the bank authorities.

Safe Custody of H.E. the Governor's Confidential Records.

On arrival these were to be met by a Guard and transferred to H.M.S. *Terrible.*

From the General Commanding the Forces in Natal,
To Captain Percy Scott, C.B., R.N.,
H.M.S. *Terrible*, Durban.

The Convent, Ladysmith,
21st March, 1900.

SIR,

I have the honour to acknowledge the receipt of your Report of the 14th March on the completion of your duties as Commandant of Durban.

I shall have great pleasure in forwarding to the proper authorities the names of the officers you bring specially to my notice. I have already written semi-officially to the First Lord of the Admiralty, requesting him to bring to the notice of the Lords Commissioners of the Admiralty the name of Commander A. H. Limpus, with a view to his promotion in recognition of the excellent work he has done since he has been under my Command.

I take this opportunity of expressing to you my high appreciation of the very efficient and successful manner in which you have carried out the arduous and important duties of Commandant of Durban, and of the excellent arrangements you made for the defence of that town.

I also wish to express to you my thanks for the very valuable assistance you have rendered in forwarding, and adapting for field service, the Naval guns which the Admiral Commander-in-Chief placed at the disposal of the military. The guns, mounted under your directions and designs, have answered every expectation, and have largely contributed both to the successful defence and the relief of Ladysmith.

I have the honour to be,
Sir,
Your obedient Servant,
(Signed) REDVERS BULLER,
General.

Town Hall, Durban,
17th March, 1900.

Captain Percy Scott, R.N., C.B.,
Durban.

MY DEAR SIR,

It affords me great pleasure on the eve of your departure to forward you herewith the enclosed resolution unanimously passed by the Town Council in acknowledgment of your valued services under the operation of Martial Law in this borough.

The tact and ability displayed by you in your arduous duties during

the period you have held office as Commandant has been in a marked degree appreciated and to this must be ascribed the good order maintained in the borough during the last few eventful months.

It becomes my duty to also convey to you my hearty thanks for the promptitude with which you placed the borough in a state of defence at a most trying time.

The operations so successfully carried out were only equalled by your readiness in sending out a guard to the Umlaas to protect our Water Supply, a matter of such moment to one and all.

I take this opportunity of informing you how much the townspeople appreciated the very orderly behaviour of your men forming the town guard during their presence in the Camp on the Market Square.

In bidding you farewell I wish you continued prosperity in your future career, and I am convinced that in doing so it is only echoing the wishes of the many with whom you have been brought in contact.

I am,
My dear Sir,
Very faithfully yours,
(Signed) JOHN NICOL,
Mayor.

Town Hall, Durban, Natal,
15th March, 1900.

Resolution passed at Meeting of the Durban Town Council, held the 15th March, 1900.

RESOLVED:—

That this Council desires to place on record its deep sense and acknowledgment of the very valuable services rendered to the Borough by Captain Percy Scott, R.N., C.B., who has held the responsible position of Commandant of this Borough under the proclamation of Martial Law for a period of over four months.

"Under his Command the disabilities of Martial Law have hardly been noticeable, whilst the general good order prevailing throughout the Borough, where large numbers of aliens and many undesirables were thronging our streets, fully demonstrates his great administrative abilities and his sterling worth as a Commander.

"JOHN NICOL,
(Seal). Mayor."

Earl Spencer, speaking on the South African War, in the House of Lords, said:—

"When his Majesty's ship *Powerful* was returning home, nothing was known of what was going on in South Africa; but when the gallant captain who commanded her heard that war was declared, he at once put into port and placed himself at the disposal of the General Commanding. He at once, although he had no orders from home, took action, which was no doubt highly appreciated at home. He proceeded to the Cape, and placed his forces at the disposal of the General Commanding. His colleague, a very gallant officer, Captain Scott, of the *Terrible,* was also there, and he did very signal service by enabling the heavy guns of the Navy—heavier, I believe, than any of those sent out with the Army from England—to be put at once into the field. The efforts of those two gallant men enabled a most powerful force to be added to the Army, and in all the earlier battles that took place you will find prominent in action the sailors and marines. With regard to Ladysmith, I would venture to say that the propitious and fortunate arrival there of Captain Lambton and the ship guns had an enormous and predominant effect on the possibility of resisting the great attack of the Boers on that place. The Navy on that occasion proved, as they always have done, their valour, their desire to come to the front in war or whenever their services are required, and their power of adapting themselves to circumstances.

"The officer responsible at this time for the administration of martial law in Durban was Captain Scott, R.N., . . . who has left behind him a reputation for spotless integrity, practical common sense, tact, and inflexible justice, of which the Service he so worthily represents may well be proud. . . ."

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